JVC

SERVICE MANUAL

MODEL

KD-D4A/B/C/E/J/U

STEREO CASSETTE DECK

No. 4200
April 1981

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Specifications

Type : Component stereo cassette deck
Track system : 4-track, 2-channel
Tape speed : 1-7/8 inch/sec (4.8 cm/sec)
Frequency response:
  (0 VU recording)
    Metal tape *1 ; 30 – 12,500Hz (± 3dB)
    SA/Chrome tape *2 ; 30 – 8,000Hz (± 3dB)
    SF/Normal tape *3 ; 30 – 8,000Hz (± 3dB)
  (–20 VU recording)
    Metal tape *1 ; 20 – 18,000Hz (30 – 16,000Hz ± 3dB)
    SA/Chrome tape *2 ; 20 – 18,000Hz (30 – 16,000Hz ± 3dB)
    SF/Normal tape *3 ; 30 – 17,000Hz (30 – 15,000Hz ± 3dB)
  Surpasses DIN 45 500
  Note: *1 ... JVC ME or Equivalent
  *2 ... TDK SA or Equivalent
  *3 ... MAXELL UD or Equivalent
S/N ratio : 60dB (from peak level, weighted, Metal tape)
  The S/N is improved by 5dB at 1kHz and by 10dB above 5kHz with ANRS/Dolby B NR on. (DIN 45 500 weighted)
Effect of Super ANRS : (normal tape)
  Improvement of S/N : the same as with ANRS
  Improvement of frequency response:
    0 VU recording; 6dB at 10kHz
    +5 VU recording; 12dB at 10kHz
  Improvement of distortion:
    0 VU recording; 3% or less at 10kHz
    +5 VU recording; 3% or less at 10kHz
Wow and flutter : 0.05% (WRMS)
  0.17% (DIN 45 500)
Crosstalk : 65dB (1kHz)
Harmonic distortion : K3; 0.4% THD; 1.0% (metal tape, 1kHz 0 VU)
Bias : AC bias
Erasure : AC erasure
Heads : METAPERM head for recording/playback, 2-gap Ferrite head for erasure
Motor : Electronic governed DC motor
Fast forward time : 105 sec or less with C-60 cassette
Rewind time : 105 sec or less with C-60 cassette
Semiconductors : 21 ICs, 30 transistors, 39 diodes, 4 LEDs
Input terminals
  Mic jack x 2 : Max sensitivity; 0.2mV (–72dBs)
    Matching impedance; 600Ω – 10kΩ
  Input jack x 2 : Min. input level; 80mV (–20dBs)
    Input impedance; 100kΩ
Output terminals
  Output jack x 2 : Output level; 300mV
    Output impedance; 5kΩ
  Phones jack x 1 : Output level; 0.3mV (8Ω)
    Matching impedance; 8Ω – 1kΩ
DIN socket : Min. input level; 0.1 mV/kΩ
  Input impedance; 10kΩ
  Output level; 300 mV
  Output impedance; 5kΩ
  Matching impedance; 50kΩ or more
Power requirement: : AC 120V, 60Hz (KD-D4C/J)
  AC 240/220/120V, 50/60Hz (KD-D4A/B/E)
  AC 240/220/120/100V, 50/60Hz (KD-D4U)
Power consumption : 17W
Dimensions : 16½″ (420mm)W
  4½″ (115mm)H
  9 7/8″ (250mm)D
Weight : 10.6 lbs (4.8 kg)

Design and specifications are subject to change without notice.

Features

Multi function counter
  1) Stop watch
  2) Tape amount time
  3) MMS indicator
  4) Memory stop/play
SPI, VU, Peak new FL meter
Soft-touch one motor mechanical logic operation mechanism
Multi-music scan system
ANRS/DOLBY B and Super ANRS incorporated
Rewind auto-play
One button recording
Cue & review facility
Metal tape compatible
METAPERM R/P head & two-gap ferrite head for erase
Timer standby facility

Controls and Connections

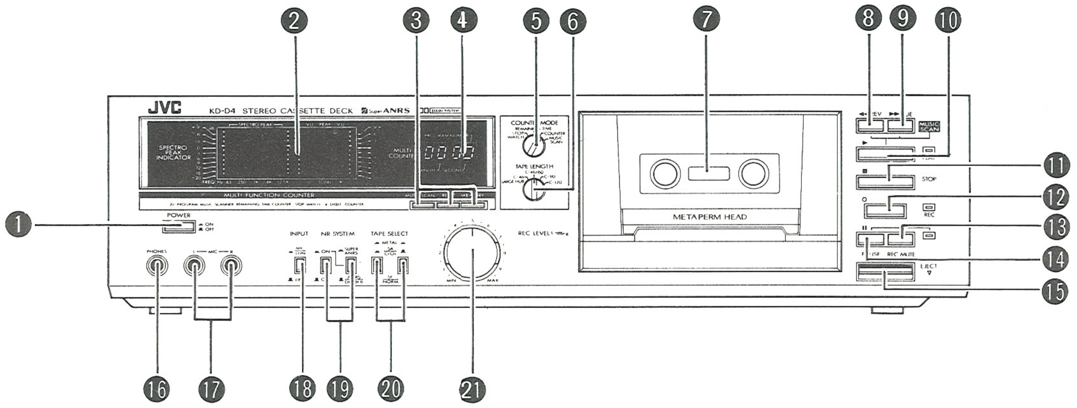

②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
①
⑯
⑰
⑱
⑲
⑳
㉑
JVC
KD-D4 STEREO CASSETTE DECK
Super ANRS
SPECTRO PEAK INDICATOR
MULTI FUNCTION COUNTER
COUNTER MODE
TAPE LENGTH
METAPERM HEAD
POWER
PHONES
MIC
INPUT
NR SYSTEM
TAPE SELECT
REC LEVEL
MUSIC SCAN
STOP
REC
REC MUTE
EJECT

Fig. 1

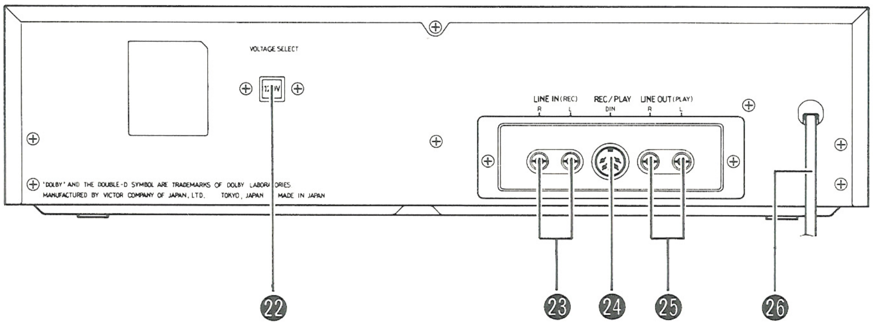

VOLTAGE SELECT
LINE IN (REC)
REC/PLAY DIN
LINE OUT (PLAY)
R
L
"DOLBY" AND THE DOUBLE-D SYMBOL ARE TRADEMARKS OF DOLBY LABORATORIES
MANUFACTURED BY VICTOR COMPANY OF JAPAN, LTD. TOKYO, JAPAN MADE IN JAPAN
㉒
㉓
㉔
㉕
㉖

Fig. 2

① POWER switch
② $\left(\begin{array}{l}\text{SPI}\\\text{VU}\\\text{Peak}\end{array}\right)$ new FL meter
③ Counter buttons
  MUSIC SCAN
  RESET
  MEMORY
④ Counter
⑤ COUNTER MODE switch
⑥ TAPE LENGTH switch
⑦ Cassette holder
(Cassette operation buttons)
⑧ ◀◀ REV (Review) button
⑨ ▶▶ CUE button
⑩ ▶ PLAY button with indicator
⑪ ■ STOP button
⑫ ○ REC (Record) button with indicator
⑬ REC MUTE button
⑭ ❚❚ PAUSE button with indicator
⑮ ▼ EJECT button
⑯ Headphone jack [PHONES]
⑰ Microphone jacks [MIC – Left, Right]
⑱ INPUT select switch $[\frac{\text{MIC}}{\text{DIN}} - \text{LINE}]$
⑲ NR SYSTEM switches
  $(\text{OFF} - \frac{\text{ANRS}}{\text{DOLBY B}} - \text{Super ANRS})$
⑳ TAPE SELECT switches
  $(\frac{\text{SF}}{\text{NORM}} - \frac{\text{SA}}{\text{CrO}_2} - \text{METAL})$
㉑ REC LEVEL controls
  (L – left channel, R – right channel)
㉒ VOLTAGE SELECT switch
㉓ LINE IN (REC) terminals
㉔ REC/PLAY (DIN) socket
㉕ LINE OUT (PLAY) terminals
㉖ Power cord

Main Parts Location

(Top view)

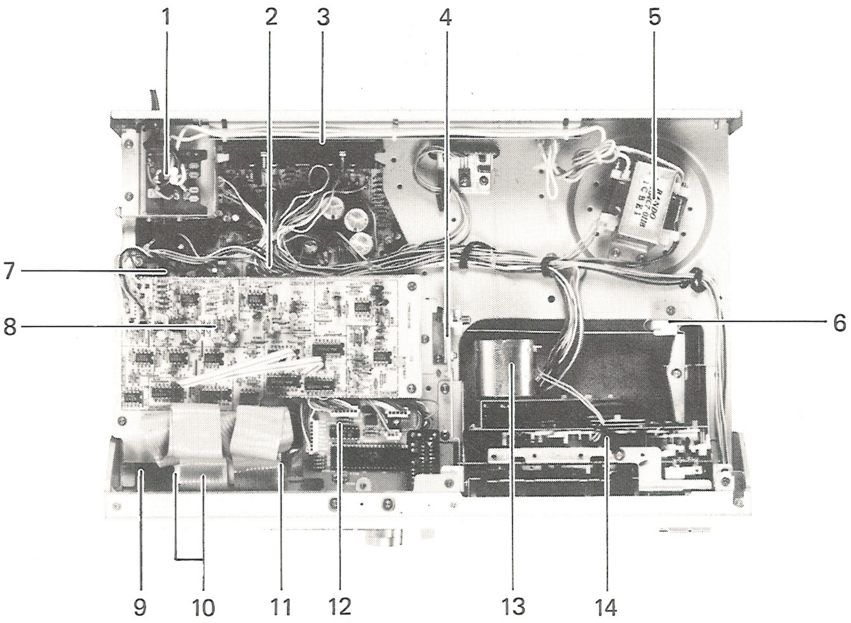


Fig. 3

1. Power switch P.W.B ass'y
2. Main Amp. P.W.B ass'y
3. Pin jack terminals
4. Gear-oiled damp braker
5. Power transformer·
6. Recording bar bracket
7. Power switch remote bar
8. Recording switch
9. Headphone jack
10. Microphone jacks
11. Select switches
12. Multi function P.W.B ass'y
13. Motor
14. Mechanical assembly

Mechanical parts are the same as location of model KD-D3.
Please refer to the service manual of KD-D3A/B/C/E/J/U. (No. 4196 – page 4)

Maintenance

To get long, trouble-free service, maintenance is important. Do not forget cleaning and demagnetizing.

Cleaning

After long use, the heads and tape part – capstan, pinch roller, etc. – will become dirty with dust or magnetic particles. Dirty heads cause imperfect erasing or high frequency drop-off. A dirty capstan and pinch roller will cause unstable tape speed, leading to increased wow and flutter. Always keep them clean by following the procedure below.

1. Heads

Use the head cleaning stick provided to wipe the surface where the tape comes into contact with the head.
(It is effective to moisten the cotton with alcohol.)

2. Pinch rollar and capstan

Do the same method as heads.

3. Cabinet

When the cabinet becomes dirty, wipe it with a soft cloth soaked with a neutral cleaning solution of a polishing cloth.
* Do not use thinner or benzine.

Demagnetizing

The heads are made from a material resistant to magnetization, but after long use they become magnetized.
A magnet brought into their vicinity can magnetize the heads, causing excess noise. If noise seems to have increased, demagnetize the heads with a head demagnetizer through the following procedure.

1. Turn the POWER switch OFF.
2. Wrap the tip of the demagnetizer with vinyl tape or soft cloth so as not to damage the head surface. Switch on the demagnetizer and bring it close to the head.
3. Move the tip of the demagnetizer slowly first to the left and right, then up and down in front of the head. Gradually move it away from the head and switch it off at a distance of more than 30 cm. (12")
4. The erase head need not be demagnetized. The capstan shaft and tape guide should be demagnetized in the same way as the record/playback head.

* Do not bring a magnetized metallic object (a screwdriver, for example) near the head as this will increase noise.

Removal of the Main Parts

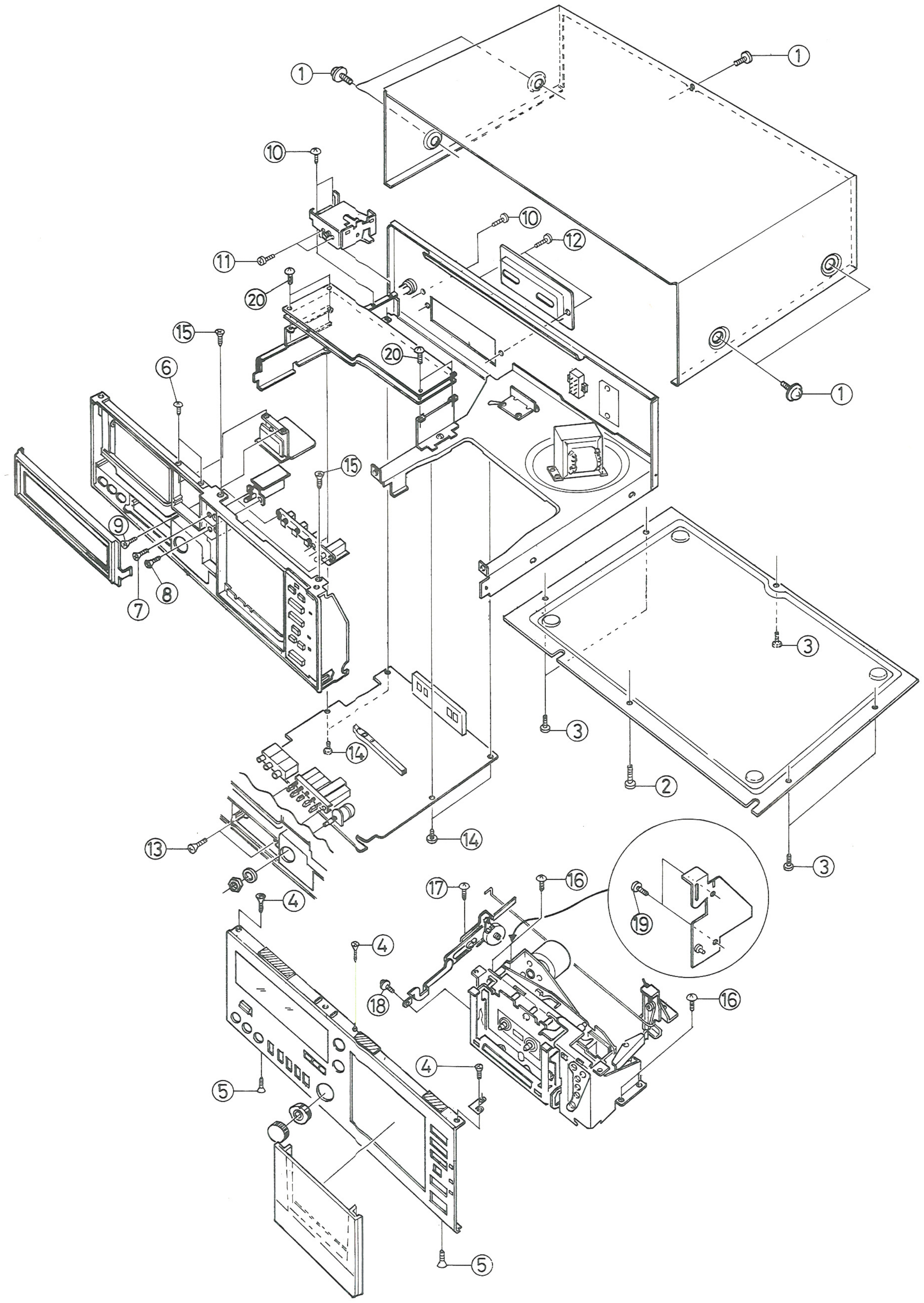


Fig. 4

Observe care in handling the parts since the parts are small in size and the distance between them are short due to a deck design aimed mainly at compactness and high performance.

Enclosure assembly parts

1. **Cassette door**
   Push the EJECT button to open the cassette door. Slide off the cassette door upwards to unlock its pawls of both sides.
2. **Top cover**
   Remove 5 screws ① fastening the top cover.
   (4 screws on both sides and a screw on rear side)
3. **Bottom cover**
   1) Remove a screw ② (SDSP3008R) fastening the bottom cover on the front.
   2) Remove 5 screws ③
4. **Front plate assembly**
   1) Pull off REC LEVEL control knobs to front side.
   2) Remove 5 screws (3 screws ④ on upper side and 2 screws ⑤ on bottom side.)

Electrical parts

When removing wire clamp (QHX2075-001), cut off it, and when clamping wires, use a new parts.

1. **Counter P.W.B. assembly**
   1) Remove 2 screws ⑥ fastening the counter P.W. board bracket to front panel.
   2) Pull off the counter P.W.B. assembly to rear side.
2. **DISPLAY MODE SW assembly**
   Remove 2 screws ⑦ fastening this VR to front panel.
3. **TAPE LENGTH SW assembly**
   Remove 2 screws ⑧ fastening this VR to front panel.
   Remove 2 screws ⑨ fastening this SW to front panel.
4. **Power switch P.W.B. assembly**
   Remove 3 screws ⑩ fastening the bracket (inclose a screw for the rear cover)
   Remove 2 screws ⑪ fastening the switch.
5. **Main amplifier P.W.B. assembly**
   1) Remove 2 screws ⑫ fastening the pin jacks cover.
   2) Remove 2 screws ⑬ fastening the switches ass'y to front panel.
   3) Remove a nut and a washer fastening REC LEVEL VR to front panel.
   4) Remove 4 screws ⑭ fastening the main amp. P.W.B.
   5) Remove a wire for REC/PB select switch.
6. **Display P.W.B. assembly**
   Remove 4 screws ⑳ fastening the display P.W.B.

Mechanical assembly

1. Remove 2 screws ⑮ fastening the mecha. ass'y on the front panel (upper side).
2. Remove 4 screws ⑯ fastening the mecha. bracket to chassis (each 2 p.c.s on both side.)
3. Remove a screw fastening the gear-oiled damper ⑰ to chassis.
4. Remove a screw fastening the gear-oiled damper arm ⑱ to cassette holder.
   When removing the cassette holder, remove 2 screws ⑲ fastening the left bracket.
5. Open the wire clamp for heads wires on bottom side.

Mechanical parts

The removal methods of mechanical parts are the same as model KD-D3A/B/C/E/J/U, please refer to service manual of KD-D3A/B/C/E/J/U (No. 4196, page 10)

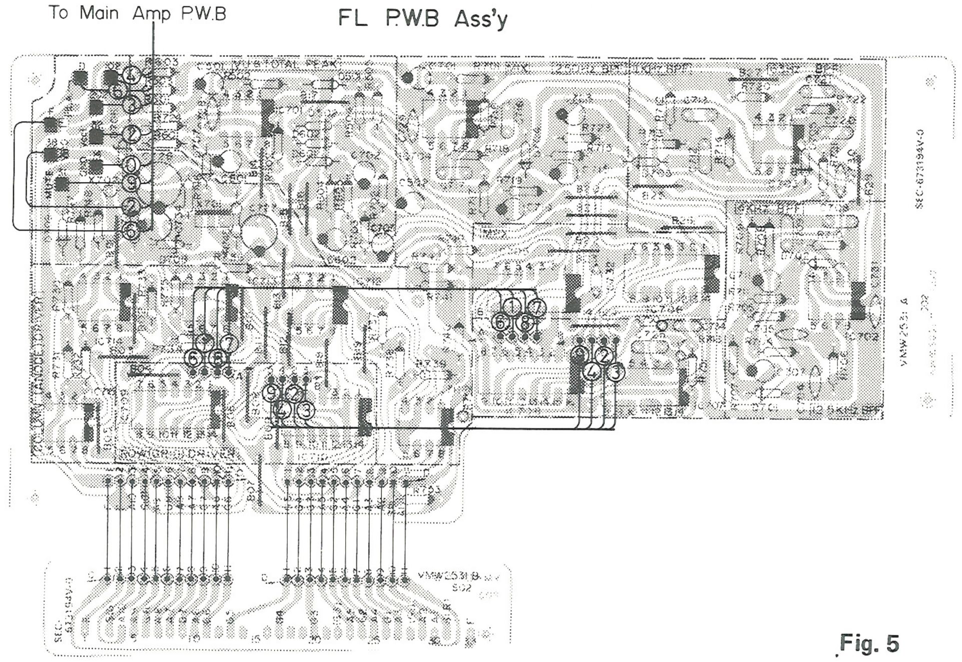


Fig. 5

Block Diagram

Recording system

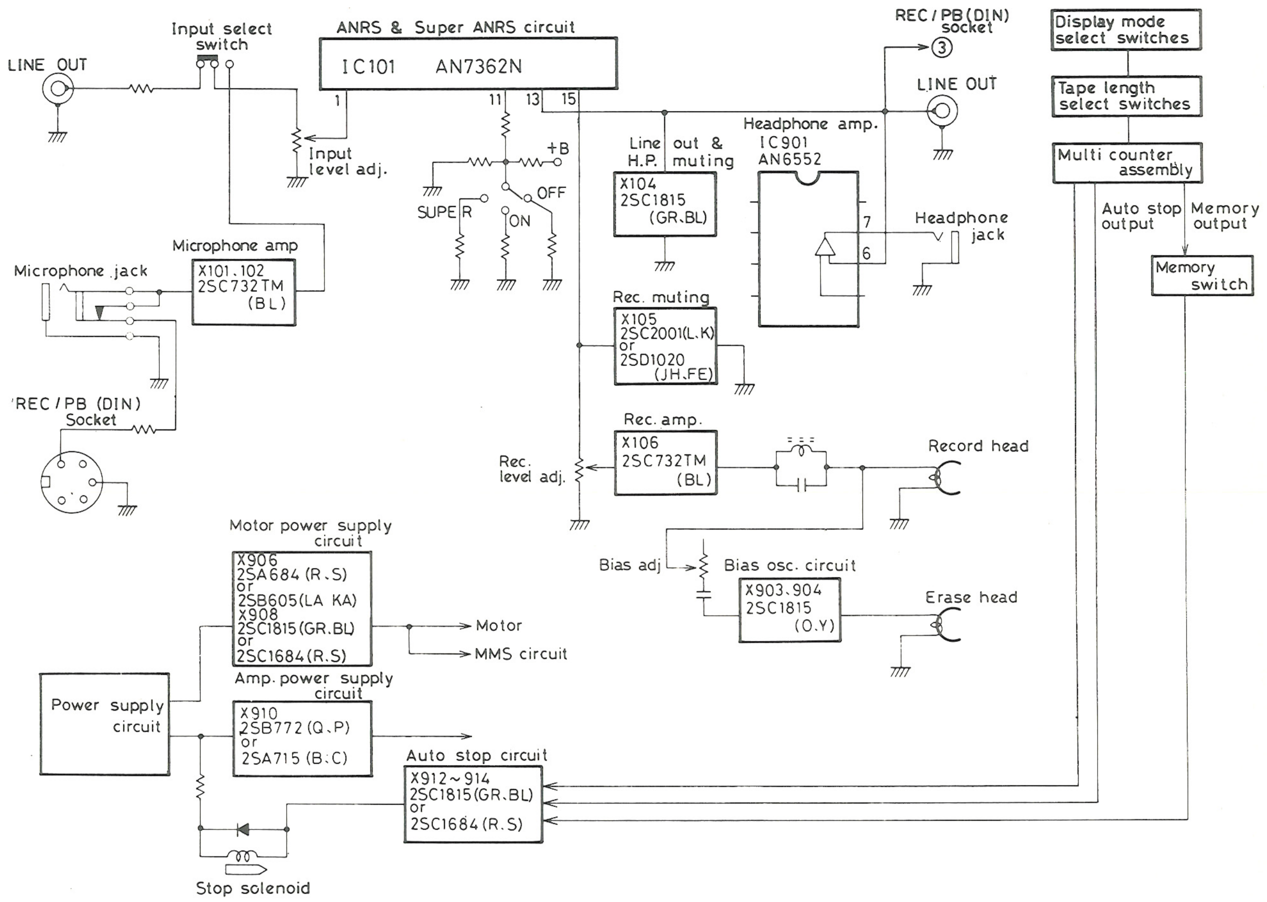

LINE OUT
Input select switch
Input level adj.
ANRS & Super ANRS circuit
IC101 AN7362N
1
11
13
15
+B
OFF
ON
SUPER
Line out & H.P. muting
X104 2SC1815 (GR.BL)
Headphone amp.
IC901 AN6552
REC/PB (DIN) socket
③
LINE OUT
Headphone jack
7
6
Display mode select switches
Tape length select switches
Multi counter assembly
Auto stop output
Memory output
Memory switch
Microphone amp
X101.102 2SC732TM (BL)
Microphone jack
REC/PB (DIN) Socket
Rec. muting
X105 2SC2001(L.K) or 2SD1020 (JH.FE)
Rec. amp.
X106 2SC732TM (BL)
Rec. level adj.
Record head
Bias adj
Bias osc. circuit
X903.904 2SC1815 (O.Y)
Erase head
Motor power supply circuit
X906 2SA684 (R.S) or 2SB605(LA KA)
X908 2SC1815(GR.BL) or 2SC1684(R.S)
Motor
MMS circuit
Power supply circuit
Amp. power supply circuit
X910 2SB772 (Q.P) or 2SA715 (B.C)
Auto stop circuit
X912~914 2SC1815(GR.BL) or 2SC1684 (R.S)
Stop solenoid

Fig. 6

Playback system

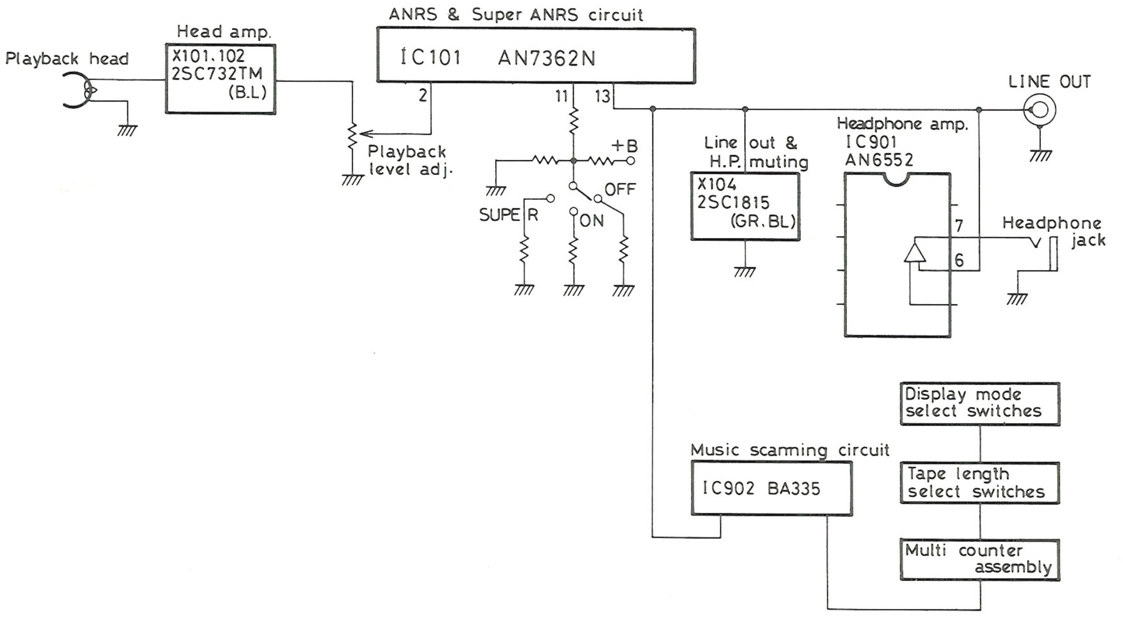
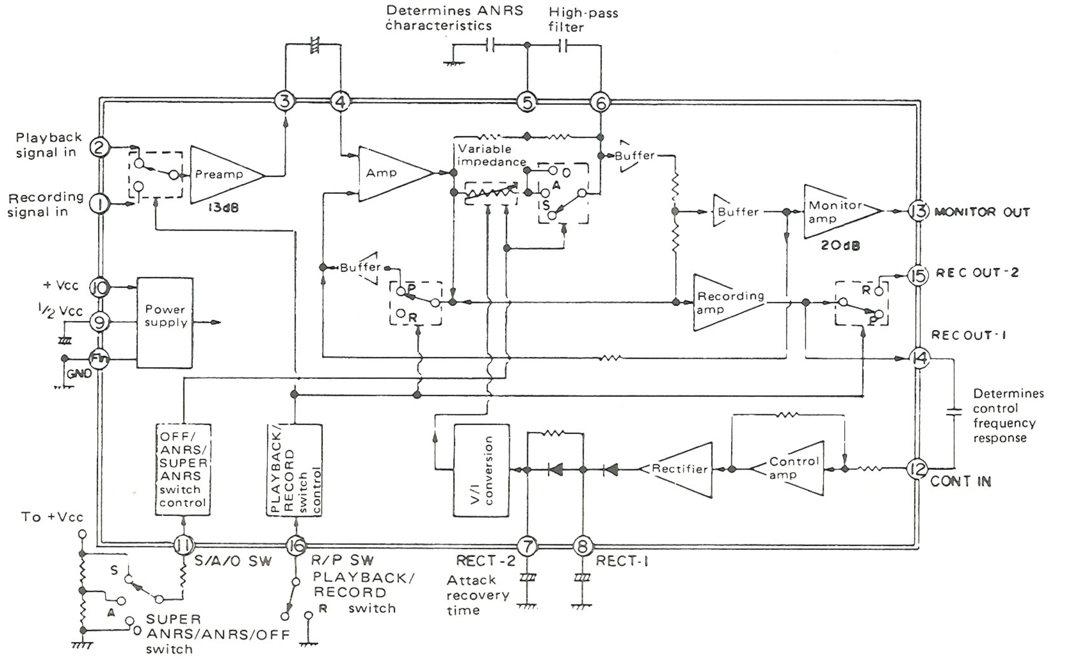

Playback head
Head amp.
X101.102 2SC732TM (B.L)
ANRS & Super ANRS circuit
IC101 AN7362N
2
11
13
Playback level adj.
+B
OFF
ON
SUPER
R
Line out & H.P. muting
X104 2SC1815 (GR.BL)
Headphone amp.
IC901 AN6552
7
6
LINE OUT
Headphone jack
Display mode select switches
Music scanning circuit
IC902 BA335
Tape length select switches
Multi counter assembly

Fig. 7

Integrant Circuit

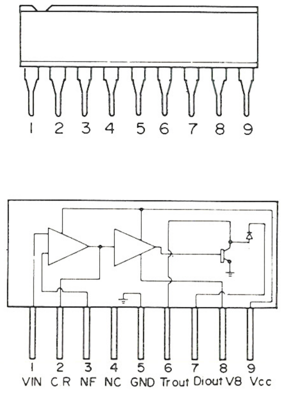
IC101, 201 AN7362N ANRS & Super ANRS

Block diagram


Determines ANRS characteristics
High-pass filter
③
④
⑤
⑥
Playback signal in
②
Recording signal in
①
Preamp
13dB
Amp
Variable impedance
Buffer
Monitor amp
20dB
⑬ MONITOR OUT
⑮ REC OUT·2
REC OUT·1
⑭
Determines control frequency response
Recording amp
+Vcc ⑩
1/2 Vcc ⑨
GND
Power supply
OFF/ANRS/SUPER ANRS switch control
PLAYBACK/RECORD switch control
V/I conversion
Rectifier
Control amp
⑫ CONT IN
To +Vcc
⑪ S/A/O SW
⑯ R/P SW
PLAYBACK/RECORD switch
RECT-2 ⑦
⑧ RECT-1
Attack recovery time
SUPER ANRS/ANRS/OFF switch

IC-902 BA335

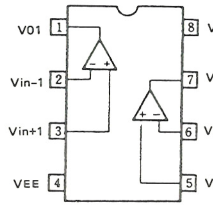
(Side view)

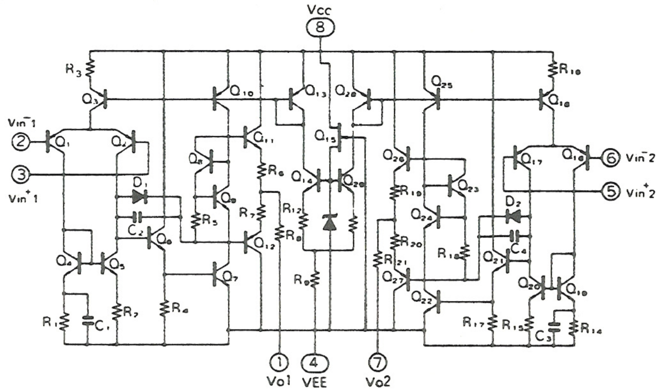

1 2 3 4 5 6 7 8 9
VIN CR NF NC GND Trout Diout V8 Vcc

IC901 AN6552

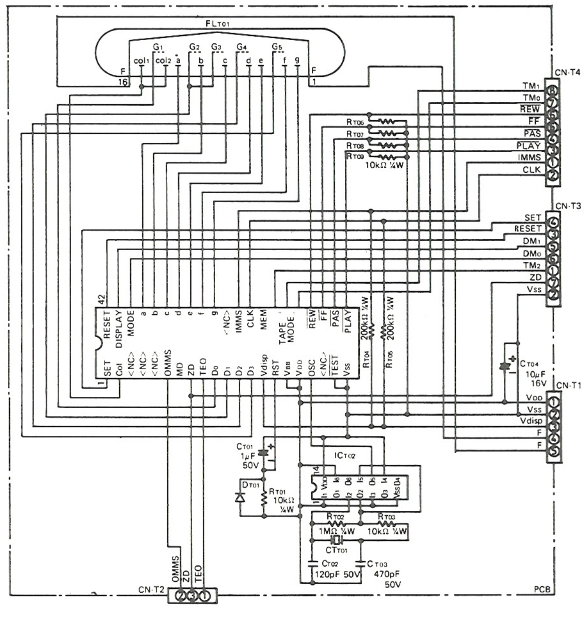
Headphone amp.

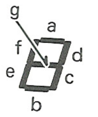
(Top view)


VO1 1
Vin-1 2
Vin+1 3
VEE 4
8 Vcc
7 VO2
6 Vin-2
5 Vin+2


Vcc ⑧
Vin-1 ②
③ Vin+1
⑥ Vin-2
⑤ Vin+2
① Vo1
④ VEE
⑦ Vo2

FL4042-01 Multi counter ass'y


FLT01
CN-T4
TM1
TM0
REW
FF
PAS
PLAY
MMS
CLK
CN-T3
SET
RESET
DM1
DM0
TM2
ZD
Vss
CN-T1
VDD
Vss
Vdisp
F
F
CN-T2
PCB
IC102
CT04 10μF 16V



TAPE MODE

TAPE	TIPES		
	TM2	TM1	TM0
C60	L	L	H
MC60	L	H	L
C90	H	L	L
C120	L	L	L
LC46	H	L	H
LMC46	H	H	L

DISPLAY MODE

MODE	TIPES	
	DM1	DM0
COUNTER	L	L
REM TIME	L	H
STOP WATCH	H	L
MMS	H	H

Fig. 8

Standard Schematic Diagram of KD-D4

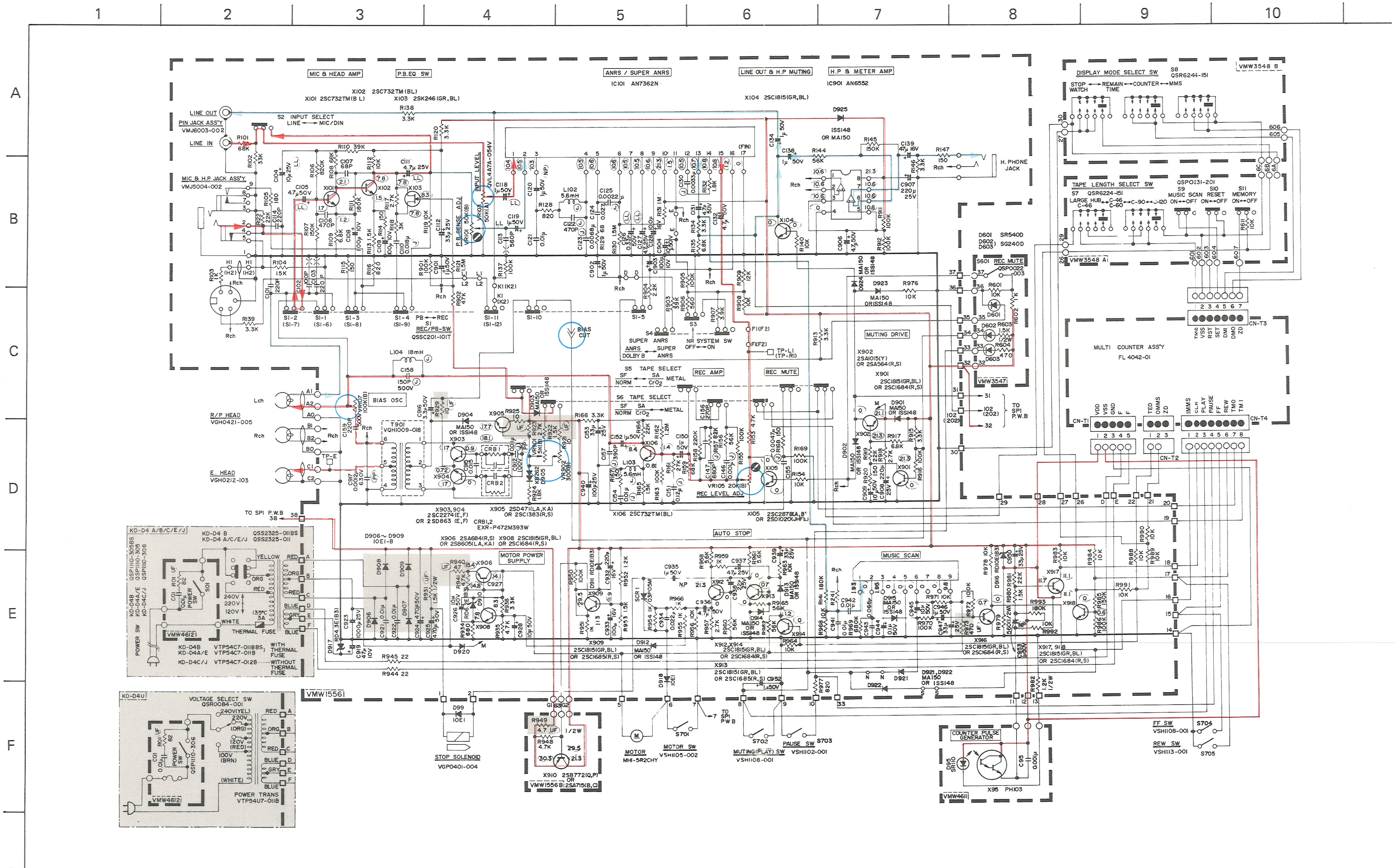
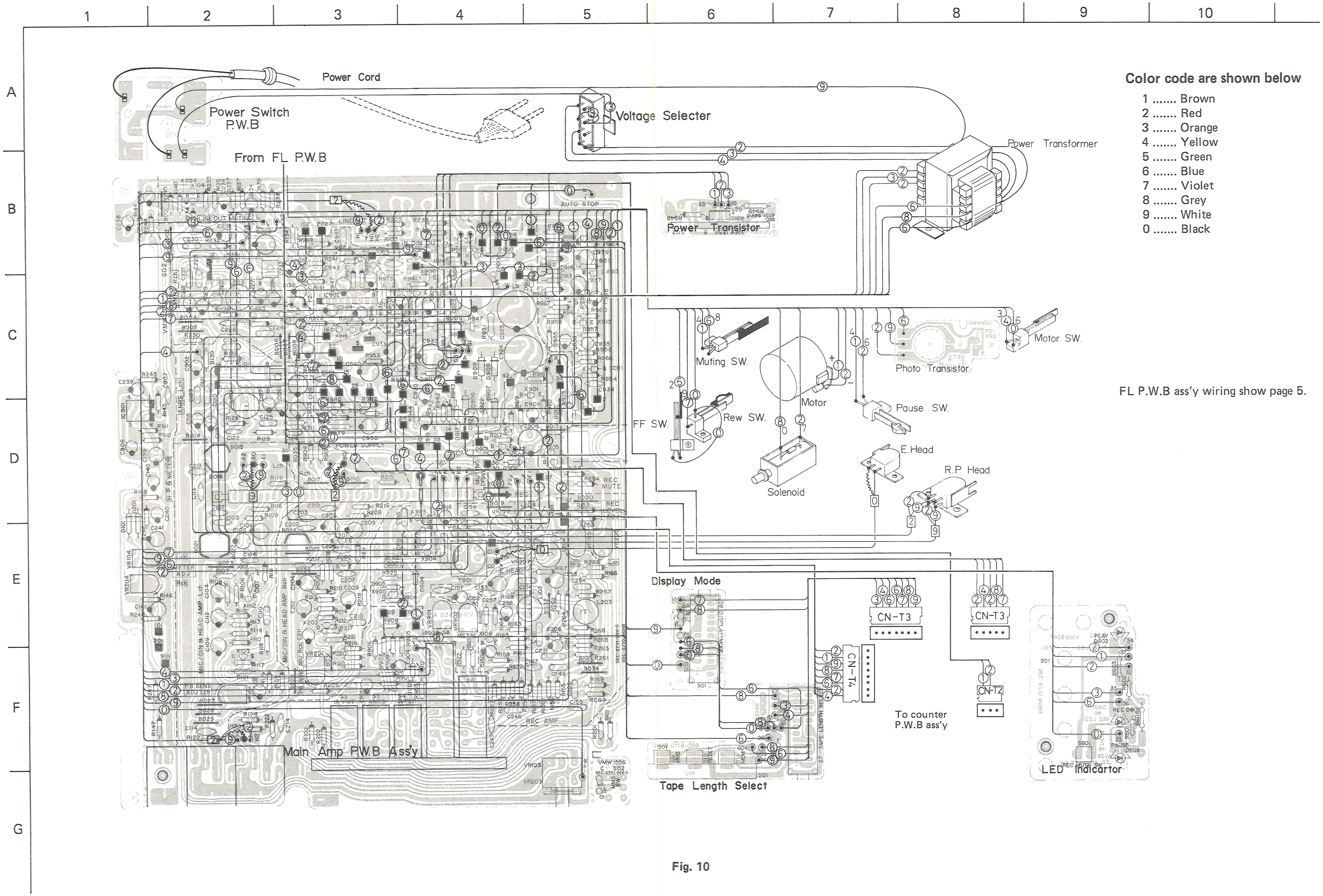

MIC & HEAD AMP
P.B.EQ SW
ANRS / SUPER ANRS
IC101 AN7362N
LINE OUT & H.P MUTING
H.P & METER AMP
IC901 AN6552
X101 2SC732TM(BL)
X102 2SC732TM(BL)
X103 2SK246(GR,BL)
X104 2SC1815(GR,BL)
LINE OUT
PIN JACK ASS'Y
VMJ6003-002
LINE IN
MIC & H.P JACK ASS'Y
VMJ5004-002
S2 INPUT SELECT
LINE ←→ MIC/DIN
INPUT LEVEL
VR101 50K(B)
VR102 50K(A)
P.B SENSE ADJ
H. PHONE JACK
DISPLAY MODE SELECT SW
S8 QSR6241-151
STOP WATCH
REMAIN TIME
COUNTER
MMS
VMW3548 B
TAPE LENGTH SELECT SW
S7 QSR6224-151
LARGE HUB C-46 C-60 C-90 C-120
QSP0131-201
S9 MUSIC SCAN
S10 RESET
S11 MEMORY
ON←→OFF
VMW3548 A
D601 SR5400
D602 SG240D
D603
S601 REC MUTE
QSP0022
MULTI COUNTER ASS'Y
FL 4042-01
CN-T1
CN-T2
CN-T3
CN-T4
VMW3547
S1 REC/PB-SW
QSSC201-101T
PB ←→ REC
BIAS CUT
BIAS OSC
S3 NR SYSTEM SW
S4 SUPER ANRS
S5 TAPE SELECT
S6 TAPE SELECT
NORM CrO2 METAL
REC AMP
REC MUTE
MUTING DRIVE
X902 2SA1015(Y) OR 2SA564(R,S)
X901 2SC1815(GR,BL) OR 2SC1684(R,S)
TO SP1 P.W.B
R/P HEAD
VGH0421-005
E. HEAD
VGH0212-103
T901 VQH1009-018
X903,904 2SC2274(E,F) OR 2SD863(E,F)
X905 2SD471(LA,KA) OR 2SC1383(R,S)
CRB1,2 EXR-P472M393W
X906 2SC732TM(BL)
X105 2SC2878(A,B) OR 2SD1020(U,HFL)
REC LEVEL ADJ
VR105 20K(B)
D906~D909 10E1-B
X906 2SA684(R,S) OR 2SB605(LA,KA)
X908 2SC1815(GR,BL) OR 2SC1684(R,S)
MOTOR POWER SUPPLY
AUTO STOP
MUSIC SCAN
X909 2SC1815(GR,BL) OR 2SC1685(R,S)
X912,X914 2SC1815(GR,BL) OR 2SC1684(R,S)
X913 2SC1815(GR,BL) OR 2SC1685(R,S)
X916 2SC1815(GR,BL) OR 2SC1684(R,S)
X917, 918 2SC1815(GR,BL) OR 2SC1684(R,S)
D921,D922 MA150 OR 1SS148
KD-D4 A/B/C/E/J
KD-D4 B QSS2325-011BS
KD-D4 A/C/E/J QSS2325-011
POWER SW
THERMAL FUSE
VMW4612
KD-D4B VTP54C7-011BBS
KD-D4A/E VTP54C7-011B
KD-D4C/J VTP54C7-012B
WITH THERMAL FUSE
WITHOUT THERMAL FUSE
KD-D4U
VOLTAGE SELECT SW
QSR0084-001
240V(YEL)
220V
120V(RED)
100V(BRN)
POWER TRANS
VTP54U7-011B
VMW1556
D99 10E1
STOP SOLENOID
VGP0401-004
X910 2SB772(Q,P) OR 2SA715(B,C)
VMW1556 B
MOTOR
MH-5R2CHY
MOTOR SW
VSH1105-002
S701
S702 MUTING(PLAY) SW
VSH1108-001
S703 PAUSE SW
VSH1102-001
COUNTER PULSE GENERATOR
X95 PH103
VMW4611
FF SW
VSH1108-001
S704
REW SW
VSH1113-001
S705
1 2 3 4 5 6 7 8 9 10
A B C D E F G

Fig. 9

NOTES.

1. Unless otherwise specified, all resistors are 1/4W, ±5% Carbon resistors, And all capacitors are 50 V fixed ceramic capacitors or 50V mylar capacitors.
2. UF — Unflammable carbon resistor
   OMF — Oxided metal film resistor
   LL — Low leak current electrolytic capacitor (±20% tolerance)
   PP — Polypropylene capacitor
3. Blue line shows the signal at playback.
   Red line shows the signal at recording and +B circuits.
4. ▨ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

Wiring connection


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
Power Cord
Power Switch
P.W.B
From FL P.W.B
Voltage Selecter
Power Transformer
Power Transistor
AUTO STOP
LINE OUT MUTING
POWER SUPPLY
Muting SW.
Photo Transistor
Motor SW.
Motor
Rew SW.
FF SW.
Pause SW.
Solenoid
E.Head
R.P Head
Display Mode
CN-T3
CN-T4
CN-T2
Tape Length Select
LED Indicartor
Main Amp P.W.B Ass'y

Color code are shown below

1 .... Brown
2 .... Red
3 .... Orange
4 .... Yellow
5 .... Green
6 .... Blue
7 .... Violet
8 .... Grey
9 .... White
0 .... Black

FL P.W.B ass'y wiring show page 5.

To counter P.W.B ass'y

Fig. 10

Main Adjustments

[I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment

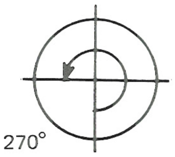
1) Electronic voltmeter
2) Audio frequency oscillator
   (range: 50—20kHz and output 0dB with impedance 600Ω)
3) Attenuator
4) Standard tapes for REC/PB
   Maxell UD – SF tape
   TDK SA – SA tape
   JVC ME – Metal tape
   } or equivalent
5) Reference tapes for playback (JVC Test Tape)
   VTT-658 (for head azimuth adj.)
   VTT-656 (for motor speed, wow flutter adj.)
   VTT-664 (for Reference Level 1kHz)
   VTT-675N (for playback frequency response)
6) Resistors
   600Ω (for attenuator matching)

2. Mechanical adjustment

1) Torque testing cassette gauge
2) Blank tape (C-120) for tape running checker.

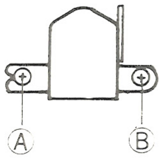
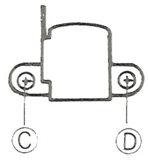
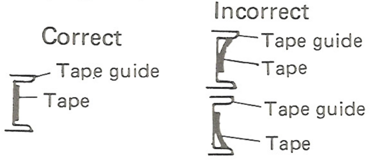
[II] Adjustment and repair of the mechanism

Tape-to-head contact adjustment



1) Turn the adjusting screw for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 270° (a ¾ revolution).
2) Check the tape-to-head contact using a C-120 tape having pads.
3) Check it again with a Metal tape.
   Checking method:
   Record a 400Hz or 1kHz signal with 0VU + 20dB.
   Erase the recording. Checking if the erasing is satisfactorily performed.
4) After adjustment, apply screw bond on the adjusting screw to prevent its loosening.

(Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting record/playback head position 	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Playback the VTT-658 test tape. 3. Adjust the head angle with the screw Ⓐ until the reading of the electronic voltmeter becomes maximum for both channels. 4. After adjusting, set the screw with screw bond.	Screw Ⓐ	Maximum	If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary. If the output difference between the left and right channels exceeds 3—4dB, the head is defective. Replace it with a new one.
Adjusting erase head height 	Turn the screw Ⓓ for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 270° (a ¾ revolution). Employ a special cassette (C-120) from which parts of the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette tape. Adjust the screw Ⓒ until the tape runs in the center of the erase head tape guide.  Incorrect Correct Tape guide Tape Tape guide Tape Tape guide Tape	Screw Ⓒ		Be sure to perform this adjustment after replacing the erase head.

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Playback the VTT-656 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000Hz.	Semi-fixed resistor in the motor	3000Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking play-back torque	Employ a torque testing cassette tape for the checking.		40–70 gr-cm	If the standard torque is not obtained, replace the take-up disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 80gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the belt.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 80gr-cm	If the standard torque is not obtained, clean the capstan belt, motor pulley, flywheel circumference, supply reel disc circumference, etc.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Playback the VTT-656 test tape. Check to see if the reading of the meter is within 0.05% (WRMS).			If the reading becomes moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary.
Multi-music scan check	1. Using a TMT-6247 with the counter display switch set to MMS, press the PLAY and REV (or CUE) buttons to check scanning. 2. Using the TMT-6237, the music scan mechanism does not function.			
Rew/auto playback check	With the counter display switch set to other than MMS and memory switch OFF, press the REV and PLAY buttons simultaneously and check that the playback mode is entered normally.			
Memory stop/ memory playback check	With the counter display switch set to COUNTER and memory switch to ON, the tape stops at about "0000" if the REV button is pressed and starts playback at around "0000" when the REV and PLAY buttons are pressed.			

[III] Electrical adjustment location

Main Amp P.W. Board (parts ass'y side view)

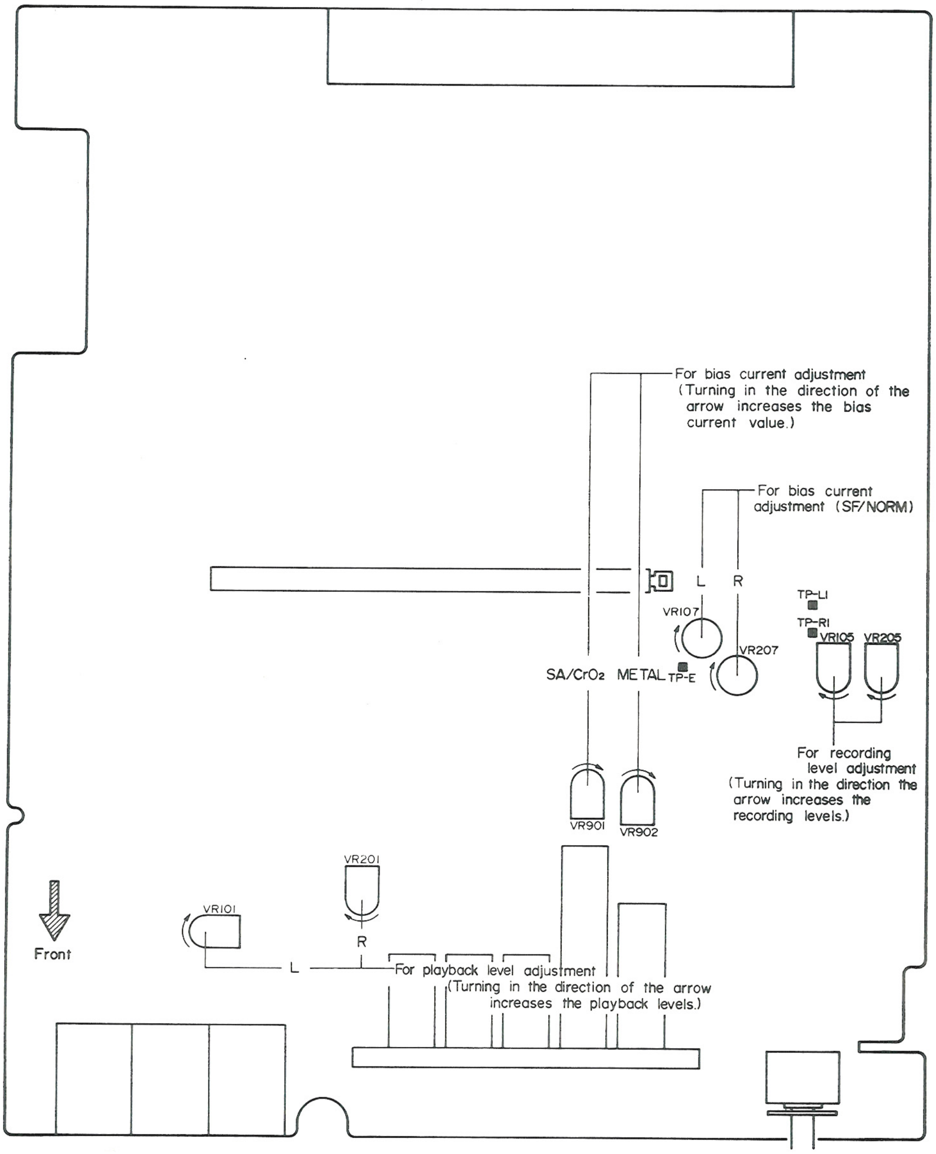

For bias current adjustment
(Turning in the direction of the arrow increases the bias current value.)
For bias current adjustment (SF/NORM)
L
R
TP-L1
TP-R1
VR107
VR207
VR105
VR205
SA/CrO2
METAL
TP-E
For recording level adjustment
(Turning in the direction the arrow increases the recording levels.)
VR901
VR902
VR201
VR101
R
L
Front
For playback level adjustment
(Turning in the direction of the arrow increases the playback levels.)

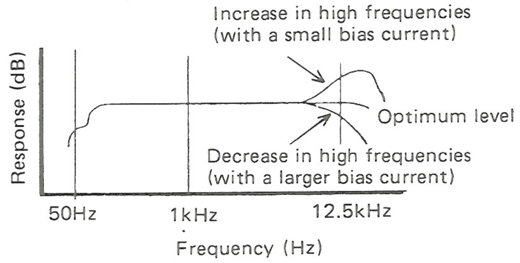
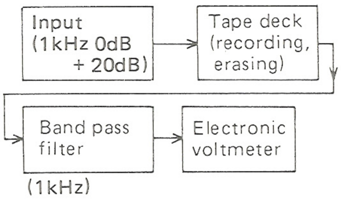
Fig. 11

[IV] Electrical circuit adjustment procedure

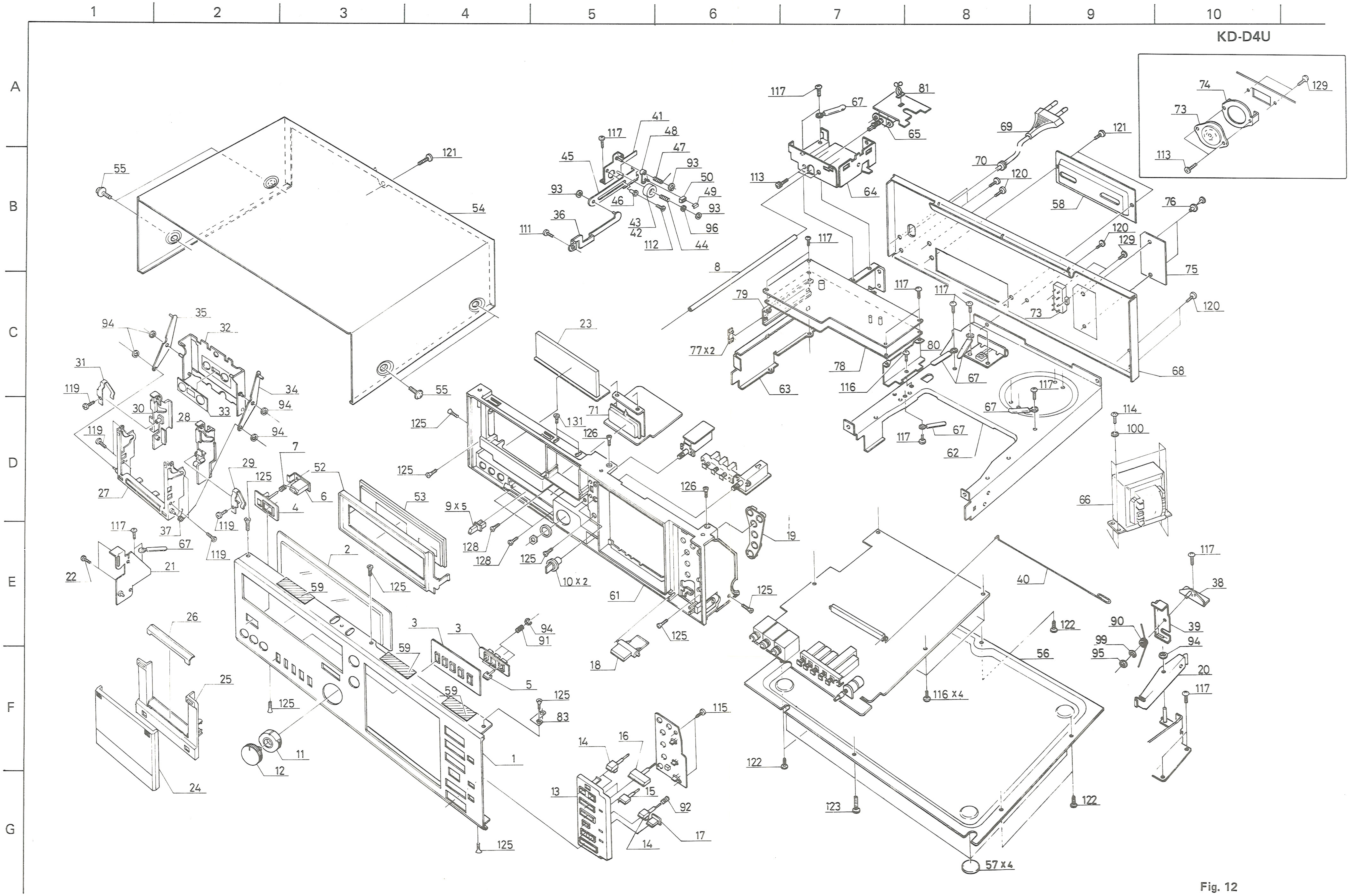
In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.

Adjustment should be performed in the order of steps 1,2, 3, ... Perform this adjustment with the ANRS switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1*	Adjusting playback level	1. Play back the VTT-664 Reference tape (1kHz) with the tape select switch set to the SF/NORM position 2. Adjust VR101 and VR201 until the LINE OUT becomes about -7dBs.	VR101 201	-7dBs	This adjustment becomes necessary when a change in playback level results (for example, due to head replacement).

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
2*	Checking record/ playback frequency response	Record 1kHz, 50Hz and 12.5kHz signals at an input level of 0dB to -20dB. Play back the tape. Check to see that the 50Hz and 12.5 kHz signal output deviations fall within the standard range, using the 1kHz signal output as a reference.  	For SF/ NORM tape; VR107 207 For SA/ CrO2 tape; VR901 For Metal tape; VR902	Reference frequency; 1kHz 0 ± 3dB at 50Hz 0 at 12.5kHz	This checking should be performed for normal, chrome and metal tapes and for both right and left channels. 1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. The current measuring method described below is an alternative one. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown left.
3	Adjusting recording level	1. Apply a 1kHz, approx. -10dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at -7 dBs at the LINE OUT terminals. 2. After checking to see if the FL indicator become 0, record the signal applied to both left and right channels using normal tape. 3. Play back the recording part. Perform the recording signal adjustment with VR105 and VR205 so that the FL indicator become 0.	VR105, 205	0 VU	The level difference between left and right channels for SF/NORM tape, chrome tape and metal tape should be less than 1dB. Perform the adjustment using a normal tape, level difference between recording and playback for SA/CrO2 and metal tapes, should be less than 1.5dB, and that between left and right channels should also be less than 1dB.
4	Checking record/ playback signal distortion	1. Record a 1kHz, -7dBs signal to LINE IN terminals and perform recording with the FL indicator become 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		SF/NORM tape; Less than 2.5% SA/CrO2 tape; Less than 3% Metal tape; Less than 2%	Be sure to perform this adjustment following bias current and recording level adjustments.
5	Checking signal to noise ratio in recording/playback	1. Record a 1kHz, 0dB signal. Stop the input by disconnecting from the terminal to perform non-signal recording. 2. Play back the recorded part. Measure the 0dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		SF/NORM, SA/CrO2 and Metal tapes; More than 42dB	Apply an output (-72dBs) to the MIC terminals with the recording level controls set to maximum so that the FL indicator become 0.
6	Checking erasing coefficient	1. Apply a 1kHz signal to the LINE IN terminals. Adjust the recording level controls until the FL indicator become 0. 2. Perform recording with the signal enhanced by 20dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 65dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter.  Input (1kHz 0dB + 20dB) Tape deck (recording, erasing) Band pass filter Electronic voltmeter (1kHz)
7	Check Auto stop	Hold less than 1 ± 0.5mm gap to the magnet from the hall IC.			

Enclosure Assembly and Electrical Parts (Except P.W. Board Parts)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10
A
B
C
D
E
F
G
KD-D4U
74
129
73
113
117
81
67
65
69
121
70
120
64
113
58
41
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47
45
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50
49
93
93
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96
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120
77 x 2
80
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63
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94
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119
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131
126
125
55
125
29
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119
117
119
67
21
22
9 x 5
128
128
125
10 x 2
126
19
66
2
59
125
61
125
40
117
38
3
3
94
91
18
125
122
90
39
99
95
94
20
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11
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83
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115
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92
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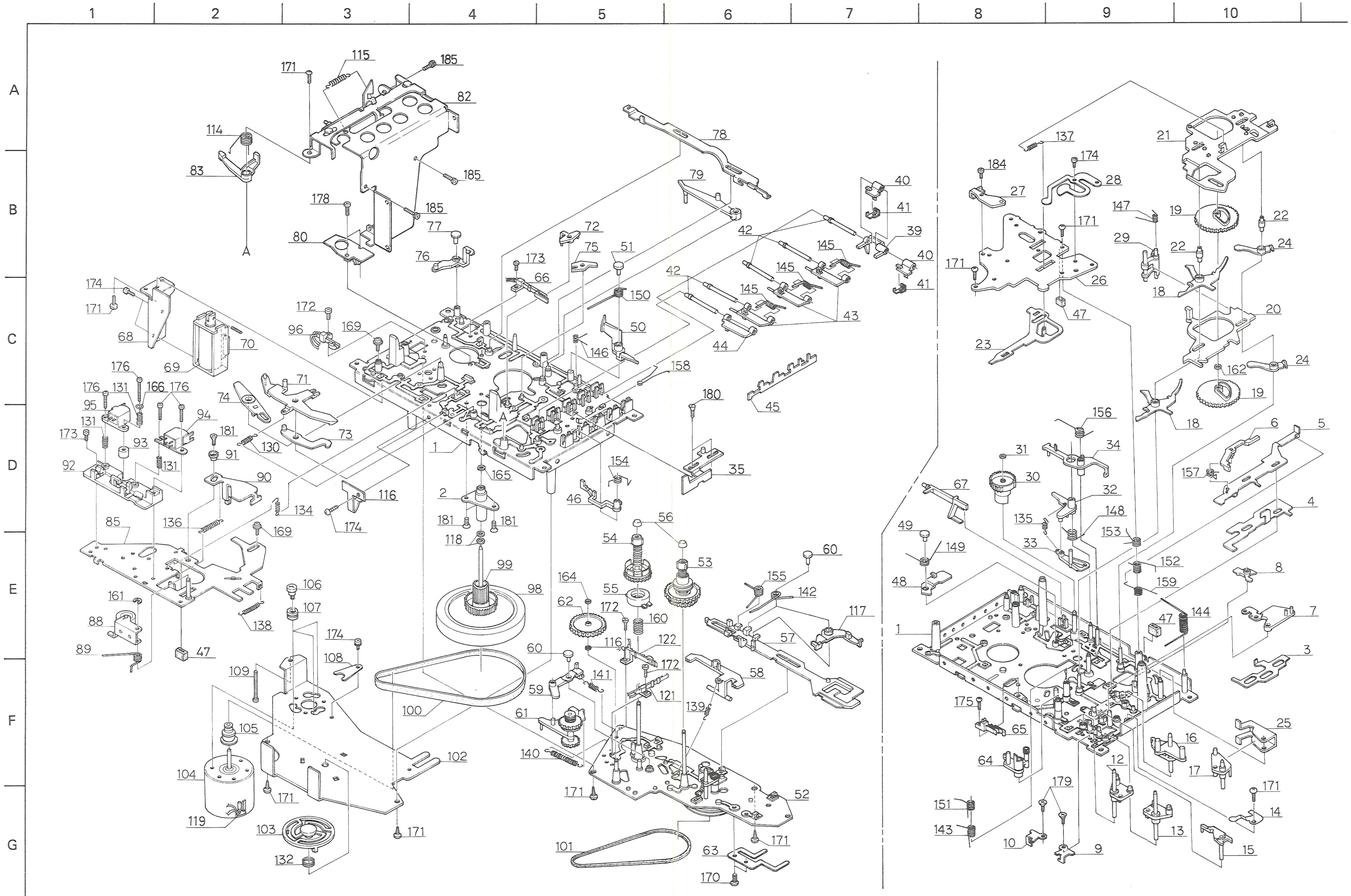
116 x 4
117
122
123
122
57 x 4
125
59

Fig. 12

Mechanical Component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10
A
B
C
D
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F
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185
82
114
83
185
78
79
137
174
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184
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28
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39
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178
185
80
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145
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147
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162
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174
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171
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179
151
143
10
9
A
A

Fig. 13

Enclosure Assembly and Electrical Parts List (Except P.W. Board Parts)

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(1~4)	ZCKD4-CBF	Front Plate Ass'y		1 set
1	VJC1162-001	Front Plate		1
2	VJK3176-001	Finder		1
3	VJD3271-001	Escutcheon	for Button	1
4	VJD4492-001	"	for Power SW Button	1
5	VXP4125-002	Push Button	for Counter	3
6	VXP4087-001	Push Button	for Power SW	1
7	VKW4265-002	Button Spring	for Power SW	1
8	VKS4003-004	Pipe	"	1
9	VXP4088-003	Push Button	for Tape Selector	5
10	VXL4145-002	Knob	for Counter	2
11	VXL4146-001	Knob	Vol. (R)	1
12	VXL4147-001	Knob	Vol. (L)	1
13	VJD2173-001	Escutcheon	for Mecha.	1
14	VXP4121-001	Push Button	"	3
15	VXP4122-001	"	"	1
16	VXP4123-001	"	"	2
17	VXP4124-001	"	Rec. Mute	1
18	VXQ4043-001	Eject Button		1
19	VKS4343-001	Button Guide		1
20	VKL4991-001	Rec. Arm(1)		1
21	VKL4983-00B	Mecha Bracket Ass'y(L)		1
22	VKZ4143-002	Screw	for Mecha	2
23	VDL2082-005D	Display Ass'y		1
24	VJT3067-001	Cassette Lid		1
25	VJT2049-004	Cassette Holder		1
26	VJT4035-003	Holder Plate		1
27	VKL4842-00A	Holder Bracket Ass'y		1
28	VJD3237-004	Tape Holder(R)		1
29	VKY4217-001	C. Spring(R)		1
30	VJD3238-004	Tape Holder(L)		1
31	VKY4218-001	C. Spring(L)		1
32	VKL3296-00B	Holder Plate Ass'y		1
33	VJD4493-001	Disk Plate		1
34	VKL4985-00A	Cross Bar Ass'y(R)		1
35	VKL4986-00A	Cross Bar Ass'y(L)		1
36	VKL5018-00A	Arm Bracket Ass'y		1
37	VKW4287-001	Holder Spring		1
38	VKL4990-00A	Rec. Bracket Ass'y		1
39	VKS4344-001	Rec. Arm(2)		1
40	VKW4281-002	Rec. Wire		1
41	VKL4644-00B	Gear Frame Ass'y		1
42	VKS4236-001	Spa Gear		1
43	VKS4109-004	Brake Drum		1
44	VKW3001-006	Comp. Spring		1
45	VKS3102-001	Rack Plate		1
46	VKH4123-001	Collar		1
47	VKW4106-001	Torsion Spring		1
48	VKS4110-002	Brake Arm		1
49	VKL4271-001	Rubber Retainer		1
50	VKZ4111-001	Rubber Tire		1
51	VKZ4001-001	Wire Holder		1
52	VJD3273-001	Escutcheon	for Meter	1
53	VJK4142-001	Counter Lens		1
54	VJC1132-001	Top Cover		1
55	VKZ3002-002	Special Screw		4

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
56	VJC1133-002	Bottom Cover		1
57	VJF4003-002	Foot		4
58	VJD3213-002	Jack Escutcheon		1
59	QHX2075-001	Wire Clump		2
60	VND4001-004	Caution Label		1
61	VJC1164-002	Front Panel		1
62	VKL1198-001	Amp Chassis(R)		1
63	VKL3257-002	Amp Chassis(L)		1
64	VKL3297-001	Power Bracket	for Power Switch	1
65	⚠ QSP1110-305	Push Switch	KD-D4A/E	1
	⚠ QSP1110-305BS	″	KD-D4B	1
	⚠ ″ -308	″	KD-D4C/J	1
	⚠ ″ -306	″	KD-D4U	1
66	⚠ VTP54C7-011B	Power Transformer	KD-D4A	1
	⚠ VTP54C7-001BBS	″	KD-D4B	1
	⚠ VTP54C7-012B	″	KD-D4C/J	1
	⚠ VTP54C7-011B	″	KD-D4E	1
	⚠ VTP54U7-021B	″	KD-D4U	1
67	VKZ4001-011	Wire Holder		3
68	VJC2044-001	Rear Panel		1
69	⚠ QMP2560-200	Power Cord	KD-D4A	1
	⚠ QMP9017-008BS	″	KD-D4B	1
	⚠ QMP1200-200	″	KD-D4C/J	1
	⚠ QMP3900-200	″	KD-D4E	1
	⚠ QMP7600-200	″	KD-D4U	1
70	⚠ QHS3876-162	Strain Relief	KD-D4A/C/E/J/U	1
	⚠ QHS3876-162BS	″	KD-D4B	1
71	FL4042-01	Electronic Counter Ass'y		1
72	QHX2075-001	Wire Clamp	for Bind	6
73	QSS2325-011BS	Voltage Select Switch	KD-D4B	1
	″ -011	″	KD-D4A/C/E/J	1
	QSR0084-001	″	KD-D4U	1
74	VKL4275-001	Bracket	KD-D4U	1
75	VYN2082-002PA	Name Plate	KD-D4A	1
	″ -001PA	″	KD-D4B	1
	″ -003PA	″	KD-D4C	1
	″ -004PA	″	KD-D4E	1
	″ -005PA	″	KD-D4J	1
	″ -006PA	″	KD-D4U	1
77	VKS3000-001	Hinge		2
78	VMA4128-001	Shield Board		1
79	VKL5008-001	SPl. Bracket(L)		1
80	VKL5009-001	SPl. Bracket(R)		1
81	VKS4354-001	Wire Clamp		1
82	TAW000504-01	Wire Connector	for Power Cord(KD-D4U)	1
83	VKL5033-01	Earth Lug		1
90	VKW3006-016	Torsion Spring	for Rec.	1
91	VKW3001-063	Spring	for Counter	3
92	VKW3001-062	Comp. Spring		5
93	REE2000	E. Ring		2
94	REE2500	″	Counter x 3 Cross Bar x 2 Rec. Arm(1) x 1	6
95	REE3000	″		1
96	Q03093-524	Washer		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
97	WNS2600Z	Washer		1
98	WBS3000	〃	for Earth	1
99	Q03093-405	Spacer		1
100	WNS3000Z	Washer	for Power Transformer	4
111	LDSP2604R	Screw		1
112	LPSP2608Z	〃		1
113	LPSP3006ZS	〃	for Switch x 2 Voltage Selector x 2 (KD-D4U)	4
114	SDSB3008Z	〃	for Power Transformer	4
115	SBSF3008Z	〃		2
116	SBSB3006V	〃	for Main P.W.B x 3 Display P.W.B x 4	7
117	SBSB3006C	〃	for S.P.I Bracket x 1 Rec Bracket x 1 Display Bracket x 4 P. Bracket x 2 Wire Holder x 3 Heat Sink x 2	13
118	SBSB3008Z	Screw	for Earth	1
119	SDSF2605R	〃		6
120	SPST3008RS	〃	for Rear Panel	6
121	SDST3008R	〃		2
122	SDST3006Z	〃		5
123	SDSF3012Z	〃		1
125	SSSB3006Z	〃	for Front Panel	5
126	SSSB3008C	〃	for Bracket	2
127	SSSP3006V	〃	for P.W. Board	2
128	SSSP3008V	〃	for P.W. Board	4
129	SPSP3006RS	〃	for Voltage Select Switch	2
130	SSSF3008Z	〃		5
131	SBSB3008V	〃	for Counter	2

Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VKL1195-00B	Chassis Base Sub Ass'y		1
2	VKF4109-00A	Capstan Metal Ass'y		1
3	VKL4884-001	Play Trigger Bar		1
4	VKL4885-001	FF Trigger Bar		1
5	VKL4924-001	Stop Trigger Bar		1
6	VKS4278-001	Cue Lever		1
7	VKS3135-001	Trigger Bar Cover		1
8	VKS4321-001	Trigger Bar Cover(B)		1
9	VKL4935-001	FF Safety Lever		1
10	VKL4936-001	Rew Safety Lever		1
11	VKZ4161-001	Special Screw		2
12	VKS4281-00A	Rew Lever Ass'y		1
13	VKS4283-00A	FF Lever Ass'y		1
14	VKY4206-001	Play Lever Spring		1
15	VKS4285-001	Play Lever		1
16	VKS4286-00A	Rec Lever Ass'y		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
17	VKS4288-00A	Pause Lever Ass'y		1
18	VKS4290-001	Trigger Lever		2
19	VKR3101-001	Driver Gear		2
20	VKS3129-001	Play Drive Base		1
21	VKS3130-001	FF Drive Base		1
22	VKH4303-001	Collar		2
23	VKL3281-001	Obstructive Board		1
24	VKS4291-001	Pressure Arm		2
25	VKL4917-001	FF Connecting Arm		1
26	VKL3282-001	Cover		1
27	VKL4933-001	Base Guide		1
28	VKY4205-001	Lever Return Spring		1
29	VKS4292-00A	Lock Arm Ass'y		1
30	VKR4193-001	Stop Gear		1
31	This DWG	Special Washer		1
32	VKS4294-001	Kick Lever		1
33	VKS4295-001	Select Arm		1
34	VKS4296-001	Stop Trigger Lever		1
35	VKL4972-00A	R. Safety Bar Ass'y		1
39	VKS4297-001	FF Button Lever		1
40	VKS4298-001	FF Button		2
41	VKY4207-001	FF Spring Plate		2
42	VKH3012-007	Shaft		5
43	VKS4299-001	Play Button		3
44	VKS4300-001	Pause Button		1
45	VKS4340-001	Button Lock Cam		1
46	VKS4317-001	Rec Stopper		1
47	VKZ4146-001	Rubber Stopper		2
48	VKS4303-001	Pause Lock Cam		1
49	VKS4348-001	Lock Bush		1
50	VKS4346-001	Release Lever		1
51	VKS4348-001	Lock Bush		1
52	VKL2131-00B	Reel Disk Bracket Ass'y		1
53	VKR4196-00B	Reel Ass'y		1
54	VKR4208-00B	Reel Ass'y	Supply	1
55	VKS4247-001	Back Tension Base		1
56	VKR4160-002	Reel Stopper		2
57	VKS3131-002	FF Bar		1
58	VKS3132-001	Brake Arm		1
59	VKS4306-001	FF Arm		1
60	VKS4348-001	Lock Bush		2
61	VKS4307-00A	Rew Arm Ass'y		1
62	VKR4202-001	Rew Gear		1
63	VKY4203-001	Return Spring		1
64	VKS4304-002	Switch Lever		1
65	VSH1105-002	Leaf Switch	for Motor	1
66	VSH1108-001	Switch Ass'y	for Muting	1
67	VKS4310-001	Auto Stop Lever		1
68	VKL4887-001	Solenoid Bracket		1
69	VGP0401-004	Solenoid		1
70	10E1	Si. Diode		1
71	VKS3134-001	Pause Lever(1)		1
72	VKS4313-001	Pause Lever(2)		1
73	VKS4314-001	Cue Review Lever		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
74	VKS4315-001	Switch Lever		1
75	VKS4316-001	Pause Lever(3)		1
76	VKS4347-001	Rec. Safety Lever		1
77	VKS4348-001	Lock Bush		1
78	VKL4999-001	Rec. Slide Bar		1
79	VKS4311-001	Muting Arm		1
80	VMW4611-001	P.W.B	Photo Transistor	1
81	VKZ4001-010	Wire Clamp		1
82	VKL3294-00B	Bracket Ass'y(R)		1
83	VKS4351-001	Eject Safety Lever		1
85	VKL3279-00A	Slide Base Ass'y		1
88	VKP4115-00A	Pinch Roller Arm Ass'y		1
89	VKW4253-002	Pinch Roller Spring		1
90	VKL4923-001	Slide Base Arm		1
91	VKH3013-007	Flange Collar		1
92	VKS2111-001	Head Mount Base		1
94	VGH0421-005	R/P Head		1
95	VGH0212-103	E Head		1
96	VSH1102-001	Switch Ass'y	Pause	1
98	VKF3117-00A	Flywheel Capstan		1
99	VKR3102-001	Flywheel Gear		1
100	VKB3001-013	Belt	Capstan	1
101	VKB3000-013	″	Take up	1
102	VKL3303-001	F.M. Bracket		1
103	VKS4232-001	Flywheel Holder		1
104	MMX-6M21SA	Motor		1
105	VKR4226-001	Motor Pulley		1
106	VKZ4109-001	Motor Screw		3
107	VKZ4130-001	Cushion Rubber		3
108	VKS4357-001	Rubber Stopper		1
109	VKZ4009-002	Special Screw	Earth	1
110	THS000489-02	Head Label	E. Head	1
111	VND4012-002	Head Plate	R/P Head	1
114	VKW4283-001	Torsion Spring	Eject Safety	1
115	VKW3002-086	Tension Spring	Eject	1
116	VKY4213-001	Solenoid Spring		1
117	VKS4337-001	REW Spring Holder		1
118	Q03093-814	Washer	Thruse	2
119	VKL5032-001	Lock Lever		1
120	VKH13015-010	Stud		1
121	VSH1108-001	Switch	FF	1
122	VSH1113-001	″	REW	1
130	VKW3000-004	Tension Spring		1
131	VKW3001-020	Compression Spring	Rec, E Heads	2
132	″ -048	″	Flywheel	1
134	VKW3000-021	Tension Spring	Slide Base	1
135	VKW3002-029	″	Kick Lever	1
136	″ -084	″	Slide Base Arm	1
137	″ -045	″	Obstructive Board	1
138	″ -063	″	Slide Base	1
139	″ -064	″	Brake Arm	1
140	VKW3002-065	″	Rew Arm	1
141	VKW3002-069	Tension Spring	FF Arm	1
142	VKW3006-002	Torsion Spring	FF Lever	1
143	″ -004	″	Trigger Lever	1
144	″ -005	″	FF Driver ~ Base	1
145	″ -010	″	Play Buttons	3
146	″ -007	″	Button Lock Cam	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
147	VKW3006-008	Torsion Spring	Lock Arm	1
148	〃 -009	〃	Kick Lever	1
149	〃 -011	〃	Pause Lock Cam	1
150	〃 -012	〃	Release Lever	1
151	VKW4254-001	〃	Trigger Lever	1
152	VKW4255-001	〃	Play Presser	1
153	VKW4256-001	〃	FF Presser	1
154	VKW4274-001	〃	Rec Safety Lever	1
155	VKW4258-001	〃	FF arm	1
156	VKW4261-001	〃	Stop Trigger Lever	1
157	VKW4262-001	〃	Cue Lever	1
158	VKW4263-001	〃	FF REW Safety	1
159	VKW4267-001	Torsion Spring	Stop Trigger	1
160	This DWG	Spring	Back Tension	1
161	REE2500	E. Ring	Pinch Roller Arm Ass'y	1
162	This DWG	Washer	Drive Gear	1
163	This DWG	〃	Shaft	1
164	This DWG	〃	REW Gear	1
165	Q03093-528	〃	Oil Cut	1
166	WSS2000N	Washer		1
169	SWSP2606Z	Screw	E Head	2
170	SBSB2604Z	〃	Reel Ass'y Unit	2
171	SBSB2608Z	〃	Play Lever Ass'y x 1 Cover x 2 Reel Disk Bracket Ass'y x 2 Solenoid Bracket x 1 Flywheel Holder x 2 FF Lever Ass'y x 1 Bracket(R) x 1	10
172	SDSP2606Z	〃	Pause Switch	1
173	SPSP2604Z	〃	Muting Switch Ass'y x 1	1
174	SPSP2604Z	Screw	Counter Bracket x 2 Solenoid x 1 Earth Lug x 1 Solenoid Spring x 1 Rubber Stopper x 1	7
175	SPSB2608Z	〃	Reaf Switch	1
176	SPSX2010Z	〃	REC/PB Head	3
178	SPSP2606Z	〃	Photo Transistor	2
181	SSSP2604Z	〃	Capstan Metal Ass'y x 3 Flange Collar x 1	4
184	LPSP2604Z	〃	Spring Plate x 4, Bracket x 3	7
185	SPSX2016N	〃	Wire Ass'y	1

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101 201	E. Voltmeter	10.4	10.5	10.3	10.5	10.6	10.6	10.5	10.5	10.6	21.3	1.5	10.5	10.7	10.8	10.8	1.2
	C. Tester	10.0	10.0	10.5	10.0	10.9	10.9	10.6	10.8	10.8	21.4	1.42	10.9	11	11	11	1.5
IC901	E. Voltmeter	10.6	10.6	10.6	0	10.6	10.6	10.6	21.3								
	C. Tester	11	11	10.3	0	10.3	11	11	21.4								
IC902	E. Voltmeter	1.93	0	1.95	0	0	0	0	0	9.8							
	C. Tester	1.1	0	1.9	0	0	0	0	0	9.65							

Main P.W. Board Parts

	E. Voltmeter			C. Tester		
	E	C	B	E	C	B
X901	0	21.3	0	0	21	0
X902	21.1	0	21.3	21.1	0	20.2
X903	0.72	16.6	0.89	0.7	16.7	0.9
X904	0.72	16.6	-0.03	0.7	16.7	0
X905	17.7	20.0	18.1	17.5	20.0	18.0
X906	15.4	14.1	14.8	15.0	14.0	14.0
X908	7.8	14.8	8.3	7.65	14.2	8.0
X909	11.3	29.5	11.9	11.5	27.8	12.0
X910	30.3	21.3	29.5	28.5	21.5	27.8
X912	0	21.3	0	0	21.4	0
X913	0	0	0.7	0	0	0.7
X914	0	1.2	0	0	1.2	0
X916	0	0.1	0.7	0	0	0.6
X917	11.1	20.0	11.3	11.1	20.0	11.3
X918	0	0	0.6	0	0	0.6

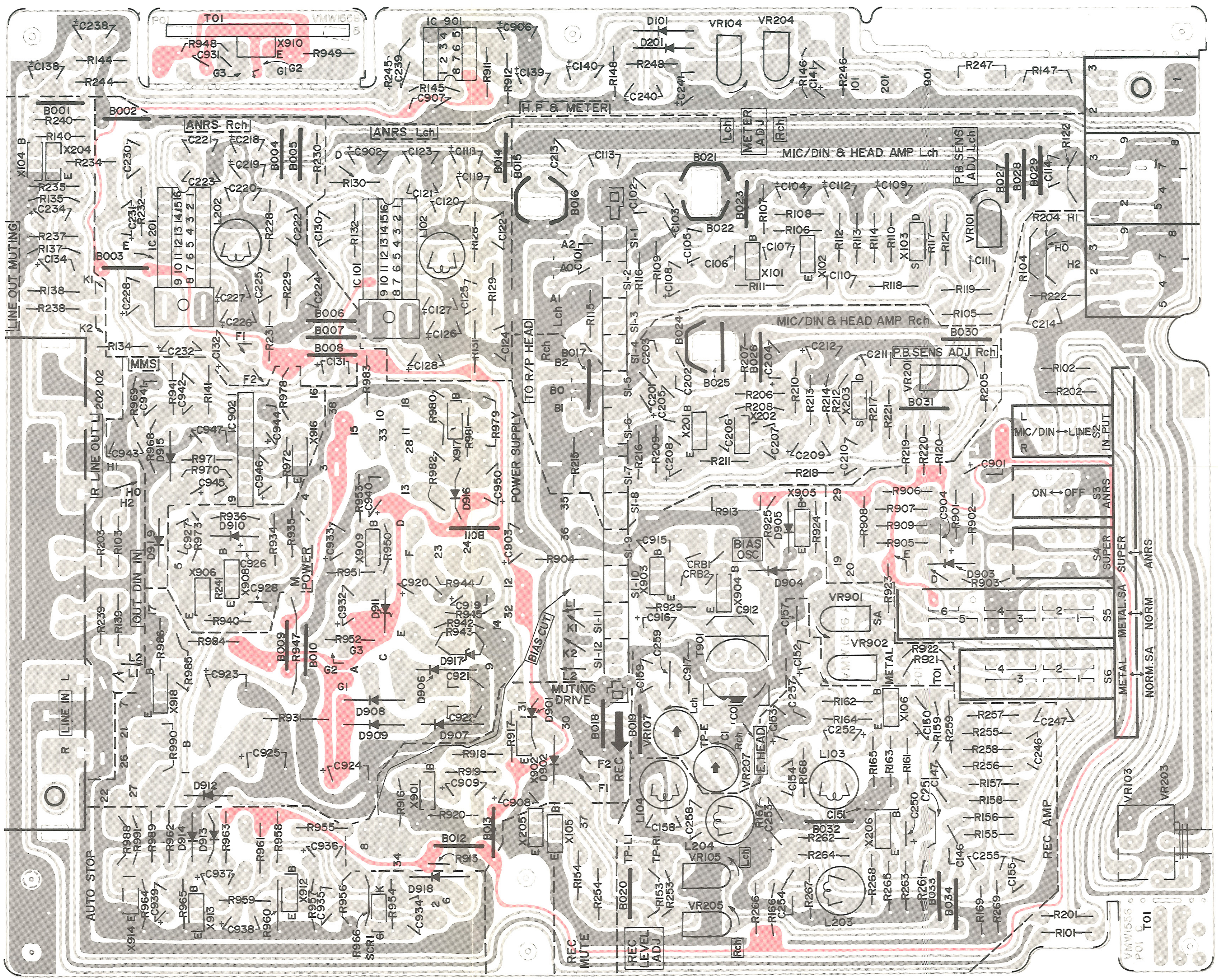
	E. Voltmeter			C. Tester		
	E	C	B	E	C	B
X101 102	1.2	2.1	1.7	1.2	1.9	10.5
X102 202	1.5	7.4	2.1	1.45	7.4	1.9
X103 203	Source 7.8	Gate 8.3	Drain 7.8	S 7.36	G 1.7	D 7.39
X104 204	0	0	0	0	0	0
X105 205	0	0	0	0	0	0
X106 206	0.81	8.4	1.4	0.8	6.62	1.1

Voltage values are measured by the following meter without input signal at NR SW = OFF, recording mode.

E. Voltmeter = Electronic Voltmeter

C. Tester = Circuit Tester (20kΩ/V impedance)

(less than 10V — 10V range
10V or more — 50V range)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
T01
IC 901
H.P & METER
ANRS Rch
ANRS Lch
MIC/DIN & HEAD AMP Lch
MIC/DIN & HEAD AMP Rch
P.B.SENS ADJ Lch
P.B.SENS ADJ Rch
METER ADJ
Lch
Rch
LINE OUT MUTING
LINE OUT
LINE IN
OUT DIN IN
POWER SUPPLY
TO R/P HEAD
MMS
POWER
BIAS OSC
BIAS CUT
MUTING DRIVE
REC
REC AMP
E.HEAD
TP-E
TP-LI
TP-RI
REC MUTE
REC LEVEL ADJ
AUTO STOP
MIC/DIN↔LINE S2 IN PUT
ON↔OFF S3 ANRS
S4 SUPER ANRS
S5 METAL.SA NORM
S6 METAL NORM.SA
VR101
VR104
VR105
VR201
VR204
VR205
VR901
VR902
VR103
VR203
IC 101
IC 201
IC 902
T901
L103
L203
L204

▨ +B

▨ Earth

Fig. 14

Display P.W. Board Parts

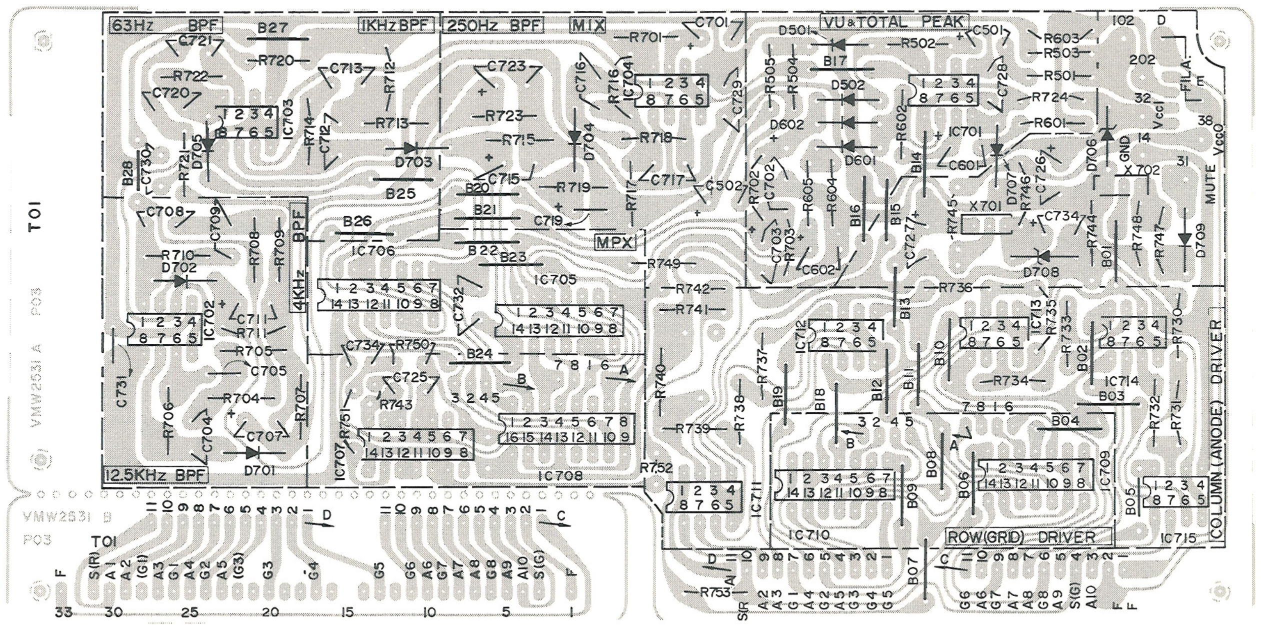
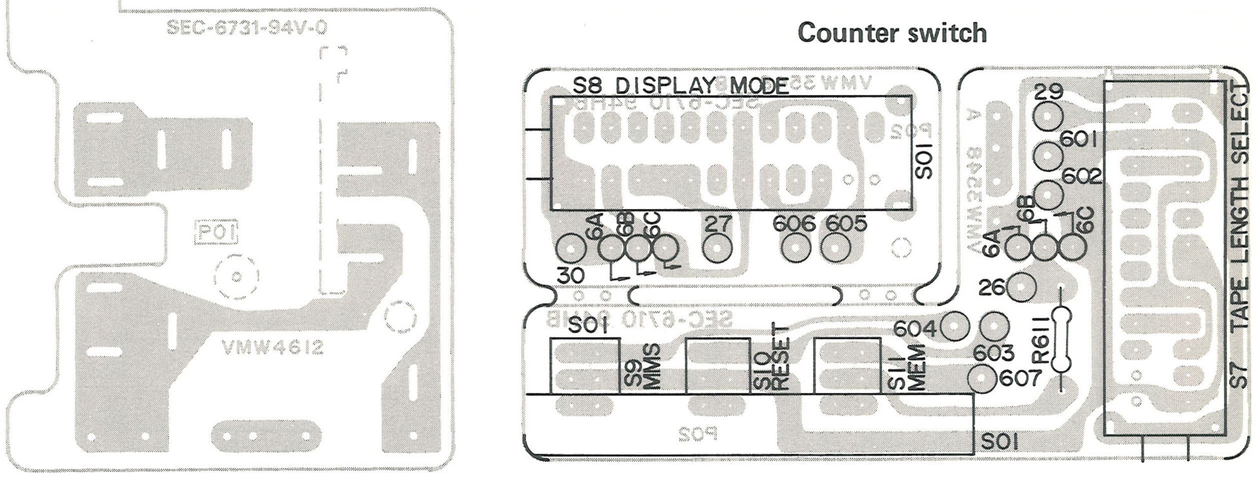

63Hz BPF
1KHz BPF
250Hz BPF
MIX
VU & TOTAL PEAK
4KHz
BPF
MPX
12.5KHz BPF
ROW(GRID) DRIVER
COLUMN (ANODE) DRIVER
VMW2531 A
VMW2531 B
P03
TO1
IC702
IC703
IC704
IC705
IC706
IC707
IC708
IC709
IC710
IC711
IC712
IC713
IC714
IC715
IC701
X701
X702
D501
D502
D601
D602
D701
D702
D703
D704
D705
D706
D707
D708
D709
FILA
MUTE
Vcc1
Vcc0
GND

Fig. 15

Other P.W. Board Parts


SEC-6731-94V-0
P01
VMW4612
S8 DISPLAY MODE
S01
S02
S7 TAPE LENGTH SELECT
S9 MMS
S10 RESET
S11 MEM
R611
6A
6B
6C
27
29
30
26
601
602
603
604
605
606
607

Power switch

Counter switch

Mecha. Switch

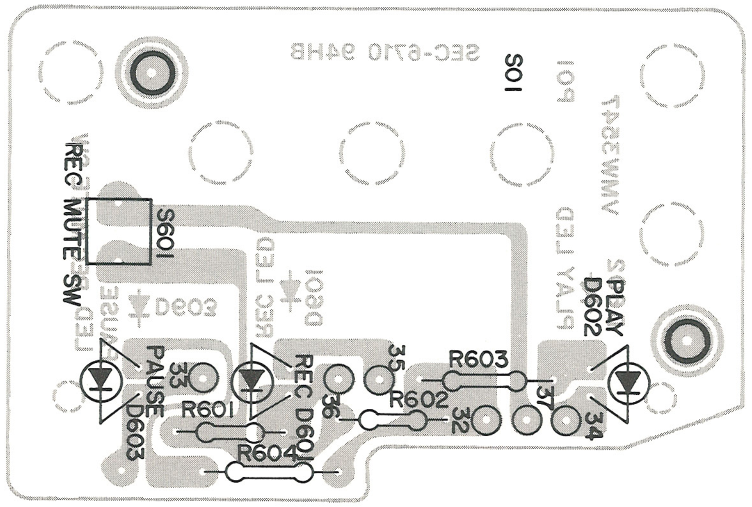

S601
REC MUTE SW
PLAY
D602
PAUSE
D603
REC D601
R601
R602
R603
R604
32
33
34
35
36
37
S01

Fig. 16

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Main P.W.B. Parts List

Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
	VMW1556-103	P.W. Board			1
R101,201,108,208, 159,259	QRD141J-683S	C. Resistor	68kΩ	1/4W	6
R102,202	〃 -333S	〃	33kΩ	〃	2
R120,220,134,234, 138,238,139,239, 146,246,166,266, 913	〃 -332S	〃	3.3kΩ	〃	13
R104,204	〃 153S	〃	15kΩ	〃	2
R122,222,919,981	〃 -223S	〃	22kΩ	〃	4
R105,205	〃 181S	〃	180Ω	〃	2
R106,206	〃 -824S	〃	820kΩ	〃	2
R107,207	〃 -154S	〃	150kΩ	〃	2
R108,208	〃 -683S	〃	68kΩ	〃	2
R109,209,135,235 917	〃 -682S	〃	6.8kΩ	〃	5
R110,210	〃 -393S	〃	39kΩ	〃	2
R111,211	〃 -184S	〃	180kΩ	〃	2
R112,212,119,219, 140,240,154,254, 908,956,963,968, 964,971,978,983, 976,984,988,989, 990,991,992	〃 -103S	〃	10kΩ	〃	23
R113,213,165,265, 980,982,922	〃 -152S	〃	1.5kΩ	〃	7
R114,214	〃 -151S	〃	150Ω	〃	2
R115,215,920	〃 -151S	〃	150Ω	〃	3
R116,216,128,228, 977	〃 -821S	〃	820Ω	〃	5
R117,217,923	QRD141J-272S	C. Resistor	2.7kΩ	1/4W	3
R118,218	QRD147J-302S	〃	3kΩ	〃	2
R121,221,130,230	QRD147J-155S	〃	1.5MΩ	〃	4
R129,229	QRD141J-680S	〃	68Ω	〃	2
R131,231	QRD147J-105S	〃	1MΩ	〃	2
R132,232,924	QRD141J-182S	〃	1.8kΩ	〃	3
R153,253,941,948	〃 -472S	〃	4.7kΩ	〃	4
R137,237,163,263, 169,269,901,905, 911,912,916,950, 970,972	〃 -104S	〃	100kΩ	〃	14
R141,241	〃 -184S	〃	180kΩ	〃	2
R144,244,902	〃 -472S	〃	47kΩ	〃	3
R145,245,985	〃 -154S	〃	150kΩ	〃	3
R147,247	〃 -151S	〃	150Ω	〃	2
R155,255	QRD141J-104S	〃	100kΩ	1/4W	2
R156,256	〃 -563S	〃	56kΩ	〃	2
R157,257	〃 823S	〃	82kΩ	〃	2
R158,258	〃 -224S	〃	220kΩ	〃	2
R161,261	〃 -273S	〃	27kΩ	〃	2
R162,262	QRD147J-125S	〃	1.2MΩ	〃	2
R164,264,122,222	QRD141J-223S	〃	22kΩ	〃	4
R167,267,168,268	QRD141J-151S	〃	150Ω	1/4W	4
R903	〃 -393S	〃	39kΩ	〃	1
R904	〃 -222S	〃	2.2kΩ	〃	1
R906	〃 -561S	〃	560Ω	〃	1
R907	〃 -392S	〃	3.9kΩ	〃	1
R909	〃 -123S	〃	12kΩ	〃	1

Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
R915,936	QRD143J-332S	C. Resistor	3.3kΩ	1/4W	2
R918	QRD141J-272S	〃	2.7kΩ	〃	1
R921,925,929	⚠QRD149J-100S	Fail Safe C. Resistor	10Ω	〃	3
R931	⚠QRD129J-152	〃	1.5kΩ	1/2W	1
R934	QRD147J-681S	C. Resistor	68Ω	1/4W	1
R951,954,955,959, 966,103,203	QRD141J-102S	〃	1kΩ	〃	7
R935	〃 -472S	〃	4.7kΩ	〃	1
R937	QRD147J-104S	〃	100kΩ	〃	1
R938	QRD143J-563S	〃	56kΩ	〃	1
R939	〃 -473S	〃	47kΩ	〃	1
R940	⚠QRD149J-4R7S	Fail Safe C. Resistor	4.7Ω	〃	1
R949	QRD129J-4R7	O.M.F. Resistor	4.7Ω	1/2W	1
R952	QRD147J-122S	〃	1.2kΩ	1/4W	1
R953	QRD141J-152S	C. Resistor	1.5kΩ	〃	1
R957	〃 -272S	〃	2.7kΩ	〃	1
R958,961	〃 -562S	〃	5.6kΩ	〃	2
R960,962,965,144,244	〃 -563S	〃	56kΩ	〃	5
R969	QRD147J-684S	〃	680kΩ	〃	1
R973	QRD149J-471S	Fail Safe C. Resistor	470Ω	〃	1
R979	QRD121K-561	C. Resistor	560Ω	1/2W	1
R980	QRD1435-152S	C. Resistor	1.5kΩ	1/4W	1
R981	〃 -223S	〃	22kΩ	〃	1
R986	〃 -104S	〃	100kΩ	〃	1
R993	QRD143J-274S	〃	270kΩ	1/4W	1
C101,201	QCS11HJ-221	C. Capacitor	220pF	50V	2
C102,202	〃 -101	〃	100pF	〃	2
C103,203	〃 -221	〃	220pF	〃	2
C104,204	QEB41EM-106M	E. Capacitor (Low Leak)	10μF	25V	2
C106,206,122,222	QCS11HK-471	C. Capacitor	470pF	50V	4
C107,207	QCS11HK-680	〃	68pF	〃	2
C108,208,109,209,903	QET41AR-107N	E. Capacitor	100μF	10V	5
C110,210	QFM41HJ-183	M. Capacitor	0.018μF	50V	2
C111,211,127,227, 105,205	QEB41EM-475M	E. Capacitor (Low Leak)	4.7μF	25V	6
C112,212,153,253, 939,947,950	QET41ER-336N	E. Capacitor	33μF	25V	7
C113,213	QCS11HK-561	C. Capacitor	560pF	50V	2
C114,214	QCS11HJ-221	〃	220pF	50V	2
C118,218,119,219	QEB41HM-105M	E. Capacitor	1μF	50V	4
C121,221,942	QFM41HK-103	M. Capacitor	0.01μF	〃	3
C123,223	QFM41HJ-682	M. Capacitor	0.0068μF	〃	2
C124,224	〃 -273	〃	0.027μF	〃	2
C125,225	〃 -222	〃	0.0022μF	〃	2
C126,226	QEB41HM-334M	E. Capacitor (Low Leak)	0.33μF	〃	2
C128,228,933	QET41CR-107N	E. Capacitor	100μF	16V	3
C130,230	QFM41HJ-332	M. Capacitor	0.0033μF	50V	2
C131,231,132,232, 936	QET41HR-475N	E. Capacitor	4.7μF	〃	5
C134,234,138,238, 150,250,152,252, 952,901,902,946	QET41HR-105N	E. Capacitor	1μF	〃	12
C139,239	QET41CR-476N	〃	47μF	16V	2
C146,246	QFM41HJ-102	M. Capacitor	0.001μF	50V	2
C147,247	QCS11HJ-681	C. Capacitor	680pF	50V	2
C151,251	QFM41HJ-124	M. Capacitor	0.12μF	〃	2
C154,254	〃 -103	〃	0.01μF	〃	2
C155,255	〃 -472	〃	0.0047μF	〃	2
C156,256	QCS11HJ-271	C. Capacitor	270pF	〃	2
C157,257	QCS11HJ-391	C. Capacitor	390pF	〃	2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
C158,258	QCS12HJ-151	C. Capacitor	150pF 50V	2
C159,259	QCY12HK-221	〃	220pF 〃	2
C904,926,945,909	QET41HR-106N	E. Capacitor	10μF 〃	4
C906	QET41HR-475N	〃	4.7μF 〃	1
C921,922	QCF11HP-103	C. Capacitor	0.01μF 〃	2
C908,907	QET41ER-227N	E. Capacitor	220μF 25V	2
C912	QFP82AJ-103	P.P. Capacitor	0.01μF	1
C915	QFM41HK-153	〃	0.015μF 〃	1
C916	QET41HR-335N	E. Capacitor	3.3μF 〃	1
C917	QFP82XJ-122	P.P. Capacitor	0.0012μF	1
C919	QET41AR-476N	E. Capacitor	47μF 10V	1
C923,924	⚠QET41ER-108N	E. Capacitor	1000μF 25V	2
C925	⚠QET41HR-477N	〃	470μF 50V	1
C928	QET41HR-106N	〃	10μF 〃	1
C932	QET41CR-227N	〃	220μF 16V	1
C934	QCF11HP-223	C. Capacitor	0.022μF 50V	1
C935,120,220,953	QEN41HA-105N	E. Capacitor	1μF 〃	4
C937	QET41ER-476N	〃	47μF 25V	1
C938	〃 -226N	〃	22μF 〃	1
C940	〃 -107N	〃	100μF 〃	1
C941	QFM41HK-103	M. Capacitor	0.01μF 50V	1
C943	〃 -683	〃	0.068μF 〃	1
C944	QET41HR-104N	E. Capacitor	0.1μF 〃	1
CRB1,2	EXR-P472M393W	C.R. Block		2
VR101,201	QVP8A0B-054A	V. Resistor	50kΩ	2
VR103,203	QVL4A7A-054V	〃	50kΩ	2
VR105,205	〃 -024A	〃	20kΩ	2
VR107,207	QVP4A0B-104	〃	10kΩ	2
VR901	QVP8A0B-053A	〃	5kΩ	1
VR902	〃 -032A	〃	300Ω	1
	TAZ336499-04	Volume Lug	for VR103,203	2
L102,202,103,203	VQP0001-562	Inductor		4
L104,204	〃 -183	〃		2
T901	VQH1009-018	OSC Coil		1
	VYH4514-002	Shield Case	for T901	1
S1	QSSC201-105R	Slide SW	R1P	1
S2-S6	QSP0251-103	Push SW Ass'y		1
	VMJ5004-002	MIC & H.P. JACK Ass'y		1
	VMJ6003-002	PIN & DIN JACK Ass'y		1
D901~904 912~915,919,922, 923,924	MA150	Si. Diode	or 1SS148	12
D905	KB262	Varistor		1
D906~909,921	⚠10E1-B	Si. Diode		5
D910	⚠RD6.2E(B3)	Zener Diode		1
D911	⚠RD10E(B3)	〃		1
D916	RD10E(B3)	〃		1
D918,921	10E1	Si. Diode		2
D920,925	MA150	〃	or 1SS148	2
SCR1	03P05M	SCR		1
X101,201,102,202, 106,206	2SC732TM(BL)	Transistor		6
X103,203	2SK246(GR,BL)	FET		2
X104,204	2SC1815(GR,BL)	Transistor		4

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
X105,205	2SD1020(JHFE)	Transistor	or 2SC2878(A,B)	2
X901,908,912,914, 917	2SC1815(GR,BL)	"	or 2SC1684(R,S) P.H	5
X902	2SA1015(Y)	Transistor	or 2SA564(R,S)	1
X903,904	2SC2274(E,F)	"	or 2SD863(E,F)	2
X905	2SC1383(R,S)	"	or 2SD471(LA,KA)	1
X906	2SA684(R,S)	"	or 2SB605(LA,KA)	1
X909,913,915,916,918	2SC1815(GR,BL)	"	or 2SC1685(R,S) P.H	5
X910	⚠2SB772(Q,P)	"	or 2SA715(B,C)	1
IC101,201	AN7362N	IC		2
IC901	AN6552	"		1
IC902	BA335	"		1
	VKL5002-001	HEAT SINK	for X910	1
	LPSP3008Z	Screw	"	1
	E43727-002	Wrapping Tab		46
	VMZ0005-001	Post Pin		4
	QWY123-019	Bus Wire		33
	VKL5027-001	Shield Plate		1

Display P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
	VMW2531-001	P.W. Board			1
	BG-91ZS	FL. Tube			1
IC701	UPC4557C	IC			1
IC702,703,704, 711~715	AN6552	"	or LA6458, RC4558P		8
IC705,706	TC4066BP	"	or MSM4066RS		2
IC707	TC4069UBP	"	or MSM4069RS		1
IC708	TC4022BP	"	or MSM4022RS		1
IC709,710	AN6554	"			2
D501,601,502,602 D701~705,707,709	MA150	Diode	or 1S2076		11
D706	RD12E(B2)	Zener Diode			1
D708	RD33E(B3)	"			1
R501,601,505,605	QRD141J-104S	C. Resistor	100kΩ	1/4W	4
R502,602	" -105S	"	1MΩ	"	2
R503,603	" -124S	"	120kΩ	"	2
R504,604	" -223S	"	22kΩ	"	2
X701	2SD571(LA,KA)	Transistor			1
X702	2SC945L(QA,PA)	"			1
R701	QRD141J-184S	C. Resistor	180kΩ	"	1
R702	QRD141J-154S	C. Resistor	150kΩ	1/4W	1
R703	" -823S	"	82kΩ	"	1
R704,708,212,716, 720,712	" -683S	"	68kΩ	"	6
R705,709,713,717, 721	" -562S	"	5.6kΩ	"	5
R706,710,714,718, 722	" -334S	"	330kΩ	"	5

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R707,711,715,719, 723	QRD141J-224S	C. Resistor	220kΩ 1/4W	5
R724	″ -104S	″	100kΩ ″	1
R730	″ -221S	″	220Ω ″	1
R731	″ -101S	″	100Ω ″	1
R732	″ -820S	″	82Ω ″	1
R733	″ -121S	″	120Ω ″	1
R734	″ -181S	″	180Ω ″	1
R735	″ -271S	″	270Ω ″	1
R736	″ -331S	″	330Ω ″	1
R737	″ -471S	″	470Ω ″	1
R738	″ -681S	″	680Ω ″	1
R739,744,741	″ -102S	″	1kΩ ″	3
R740	QRD141J-682S	″	6.8kΩ 1/4W	1
R743	″ -105S	″	1MΩ ″	1
R745	⚠QRD149J-8R2S	″	8.2Ω ″	1
R746	QRD149J-102S	″	1kΩ ″	1
R747,748	QRD141J-473S	″	47kΩ ″	2
R749	″ -222S	″	2.2kΩ ″	1
R750,752	QRD143J-103S	C. Resistor	10kΩ ″	2
R751	QRD141J-103S	″	10kΩ ″	1
C502,602	QET41HR-474N	E. Capacitor	0.47μF 50V	2
C701,702	″ -105N	″	1μF ″	2
C707,711,715,719,723	″ -335N	″	3.3μF 50V	5
C703,501,601	QET41HR-104N	″	0.1μF 50V	3
C704,705	QCS11HK-331	C. Capacitor	330pF ″	2
C708,709,725	QFM41HK-102	M. Capacitor	0.001μF ″	3
C712,713	QFM41HK-392	″	0.0039μF ″	2
C716,717	QFM41HK-153	″	0.015μF ″	2
C720,721	″ -563	″	0.056μF ″	2
C726	QET41CR-476N	E. Capacitor	47μF 16V	1
C727	QET41VR-336N	″	33μF 35V	1
C728~732	QCF11HP-103	C. Capacitor	0.01μF ″	5
	QHX2075-001	Wire Clamp	for Bind	3
	QWY123-019	Bus Wire		28
	E43727-002	Wrapping Pin		8
C734	QFM41HK-103	M. Capacitor	0.01μF 50V	1
C735	QET41HR-106N	E. Capacitor	10μF 50V	1

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Other P.W. Board Parts List

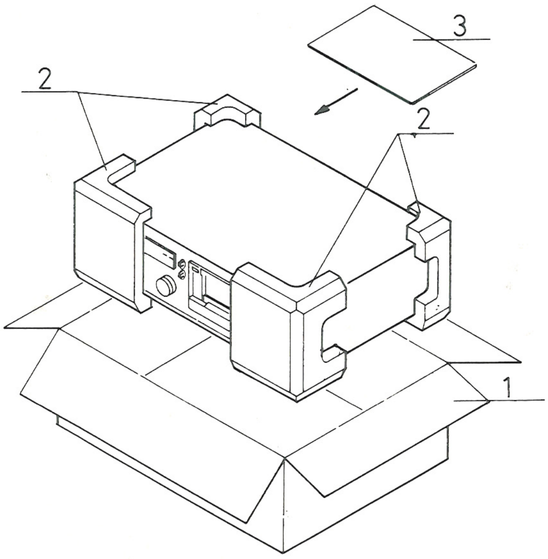
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(Power Switch)				
	VMW4612-001	P.W. Board		1
	⚠QSP1110-305	Push Switch	KD-D4A/E	1
	⚠ ″ -305BS	″	KD-D4B	1
	⚠ ″ -308	″	KD-D4C/J	1
	⚠ ″ -306	″	KD-D4U	1
	QCZ9014-103	C. Capacitor	0.01μF KD-D4C/J	1
	QCZ9015-103	″	0.01μF KD-D4U	1
	⚠QRD149J-820S	Fail Safe Resistor	82Ω 1/4W	1
	E40130-001	Tab		4
	TAZ000331-02	Fuse Holder	KD-D4U	2
		Fuse	KD-D4U	1
		Fuse Label	KD-D4U	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(Counter SW P.W. Board Ass'y)				
	VMW3548-002	P.W. Board		1
S7	QSR6224-151	Rotary SW Ass'y	TAPE LENGTH	1
S8	QSR6244-151	〃	D. MODE	1
S9-S11	QSP0231-201	Push SW. Ass'y		1
R611	QRD147J-103S	C. Resistor	10kΩ 1/4W	1
(Mecha. SW P.W.B. Ass'y)				
	VMW3548-002	P.W. Board		1
	⚠SG240D (M)	LED	Green	2
	⚠SR540D (M,N)	〃	Red	1
S601	QSP0022-003	Push Switch	Rec Mute	1
R601	QRD147J-103S	C. Resistor	10kΩ 1/4W	1
R602	〃 -102S	〃	1kΩ 〃	1
R603	QRD121K-152	〃	1.5kΩ 〃	1
R604	QRD141J-471S	〃	470Ω 1/4W	1
(Photo Transistor)				
	VMW4611-001	P.W. Board		1
	PH103(M)	Photo Transistor		1
	SR110	LED		1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VMP0002-00B	PIN Cord	KD-D4A/C/J/U	2
CN-201S	DIN Cord	KD-D4B/E	1
VYA4001-00A	Head Cleaning Stick		1
VNN0079-901	Instruction Book	KD-D4A/C/J/U	1
〃 -301	〃	KD-D4B/E	1
BT20029B	Warranty Card	KD-D4A	1
VND4013-001	Warning Label	KD-D4A/B/E	1
VND4016-001	Metal Sticker		1
TJL294422-01	Dolby Label		1
BT20013C	Guarantee Certificate	KD-D4B	1
TJL000443-01	Seal	KD-D4B	1
	BEAB Label	KD-D4B	1
QZL1002-003BS	Warning Label	KD-D4B	1
T46328-003	Caution Label	KD-D4B	1
VNC5004-001	Mark Sticker	KD-D4B/E	1
BT20025D	Warranty Card	KD-D4C	1
T44362-001	CSA Marker	KD-D4C	1
TLT000505-01	UL/CSA Caution Label	KD-D4C/J	2
BT20047	Warranty Card	KD-D4J/U for PX, EES	1
BT20046	Special Reply Card	KD-D4J	1
BT20044B	Safety Instruction	KD-D4J	1
E7795-1	EP Mark	KD-D4U for PX, EES	1
V04062-001	Siemens Plug	KD-D4U	1
T46328-001	Caution Label		1
VNC5311-101	Caution Card	for KD-D4U, EES	1

Packing



Position of controls and switch knobs at renew packing.

Counter reset ; 0000
Power switch ; OFF
Mecha operation buttons ; OFF
Music scanning switch ; OFF
ANRS switch ; OFF
Tape select switch ; SF/NORM
Rec level control ; MIN.

Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VPD2082-J02	Carton	KD-D4A/B/E/J/U	1
	VPD2082-J03	"	KD-D4C	1
2	VPH3125-001	Cushion	Left	1
3	VPH3126-001	"	Right	1
	QPGA060-06005	Envelope	for Set	1
	AP4056B-077	"	for Instruction Book	1
	TKS000501-08	Sheet	for Set	1
	Q04141H	Vinyl Tie	AC Cord	1
	or Q04141H	"	PIN Cord	2

JVC

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